

INTRODUCTION

Planning is an essential element of effective and efficient park administration and management. The North Carolina General Assembly acknowledged its importance by passing state parks system legislation that includes planning requirements.

The 1987 State Parks Act (G.S.114-44.7 through 114-44.14) stipulates that a State Parks System Plan be prepared. The first plan was completed in December 1988. It evaluated the statewide significance of each park, identified duplications and deficiencies in the system, described the resources of the system, proposed solutions to problems, described anticipated trends, and recommended means and methods to accommodate trends. The most recent update of the Systemwide Plan was completed in December 2000.

The State Parks Act also requires each park to have an individual general management plan. The general management plans are required to:

...include a statement of purpose for the park based upon its relationship to the System Plan and its classification. An analysis of the major resources and facilities on hand to achieve those purposes shall be completed along with a statement of management direction. The general management plan shall be revised as necessary to comply with the System Plan and to achieve the purpose of the [State Parks Act].

The general management plan (GMP) is to be a comprehensive five-year plan of management for a park unit. GMP's function to:

1. Describe park resources and facilities;
2. State the purpose and importance of each park unit;
3. Outline interpretive themes and propose locations for informational and interpretive facilities;
4. Analyze park and recreation demands and trends in the park's service area;
5. Summarize the primary laws guiding park operations;
6. Identify internal and external threats to park natural and cultural resources, and propose appropriate responses;
7. Identify and set priorities for capital improvement needs;
8. Analyze visitor services and propose efficient, effective, and appropriate means of responding to visitor needs; and
9. Review park operations and identify actions to support efficient and effective park administrative procedures.

The GMP for Eno River State Park, developed with public involvement, is intended to serve these purposes.

I. DESCRIPTION OF ENO RIVER STATE PARK

LOCATION AND ACCESS

Eno River State Park is located within the Eno River Valley in Orange and Durham counties, northwest of the city of Durham. The linear park has five access areas: Few's Ford, Pleasant Green, and Cabe Lands in Orange County; Cole Mill, located on the Orange-Durham county line; and Pump Station in Durham County. These areas offer entry into this scenic river environment and are easily reached from Interstate 85 by exiting onto Cole Mill Road. The Few's Ford access area, located approximately five miles north of I-85, contains the park headquarters.

The park's mailing address and telephone number are:

Eno River State Park
6101 Cole Mill Road
Durham, North Carolina 27705-9275
(919) 383-1686

Occoneechee Mountain State Natural Area is located in central Orange County south of the town of Hillsborough. Occoneechee Mountain is operated as a satellite to Eno River State Park.

PARK LAND

Eno River State Park consists of the river and – as of January 2002 – 2,709 acres of riparian land. Acquisition of additional land is planned to protect the river valley and its significant natural resources and to provide new outdoor recreation and environmental education opportunities.

As the river flows eastward from Hillsborough, its waters roll past historic mill sites, river bluffs covered with flowering shrubs, rolling hills, forests, and fords used by early settlers. In places, the river is turbulent; rocky rapids arise where water rushes and swirls around rock outcrops in its path. Further downstream, the Eno is gentle and slow-moving, meandering quietly through serene surroundings.

The river valley is narrow and steep-walled. Much of the rolling landscape, carved and sculpted over the ages by swift-flowing water, recalls rugged, mountainous terrain found further west. Although the river environment remains a peaceful haven, it is vulnerable to the pressures of rapidly expanding urban development.

All the land around the Eno was repeatedly timbered over the last 250 years, with the last virgin timber harvested in 1941. Areas outside the park boundaries are still subject to logging, but inside

the park a pattern of succession unfolds. Ridges, slopes, and flood plains are once again heavily vegetated. Pine, red-cedar, tulip-poplar, maple, dogwood, oaks, and hickories dominate the forests. Mountain laurel, Catawba rhododendron, and ferns grow on slopes and bluffs. Wildflowers bloom beneath the trees in spring, and vines such as greenbrier, grape, and trumpet vine contribute to the diversity of the park's vegetation.

Plant communities along the river provide habitat for a variety of animals. Old fields are home to mourning dove and eastern cottontails who are adapted to the weedy environment typical of early succession. The hardwood forest produces seeds and fruits that feed such mammals as white-tailed deer, raccoons, and opossums. Chipmunks, gray squirrels, beaver, and an occasional river otter may also be observed. Wood ducks, great blue herons, belted kingfishers, red-tailed hawks, owls, and various songbirds also enjoy the park's aquatic environment.

VISITOR FACILITIES

Eno River State Park is a popular hiking park, offering trails of various types and levels of difficulty. One can follow the river bank, visit historic sites, journey through woodlands, or hike a short nature trail. Hikers who complete the strenuous ascent of the 3.75-mile Cox Mountain Trail are rewarded with views of the surrounding countryside for a 30-mile distance. Along the moderately difficult 1.65-mile Bobbitt's Hole Trail, certainly one of the most scenic spots in the park, water rushes through rock outcrops and shrubs overhang stone-lined bluffs. The park's approximately 21 miles of trails allow visitors to enjoy the beauty and serenity of nature. (Figure I-1)

While the park does not currently have any bridle trails, horseback riding is permitted along power line and telephone easements in the Few's Ford area. A side road beyond the park office and to the left of the picnic area leads to a horse trailer parking lot where horses can be unloaded. Horses are not permitted on hiking trails or elsewhere in the park, however, and the park has no bike trails.

Two picnic areas provide quiet places to eat while enjoying the open air. The picnic ground at the Few's Ford area is adjacent to the parking lot where 20 tables, six grills, a 12-table picnic shelter, restroom and drinking water are provided. A short trail leads to a bluff overlooking the river. A smaller picnic area is found in the Cole Mill access area near the parking lot. Ten tables, an eight-table picnic shelter, five grills, a group area with three tables, and two vault toilets are provided within a short distance of trail heads.

As the river flows through rolling hills and mountainous terrain, Class I, II, and III rapids are created. Canoeing is best when the bridge gauges read from one to three feet, which happens most often in winter and spring after heavy rains. When the river is over the three-foot level, swift water, low water dams, and dislodged trees create dangerous conditions. When the water level is less than the one-foot level, which is most of the year, portaging is necessary. Bridges are marked with gages indicating the water level of the river. Information on water conditions may

also be obtained at the park office. Rapids cease just downstream from the park where the river enters the Triassic Basin and moves more slowly. Canoe access points are located in several areas of the park.

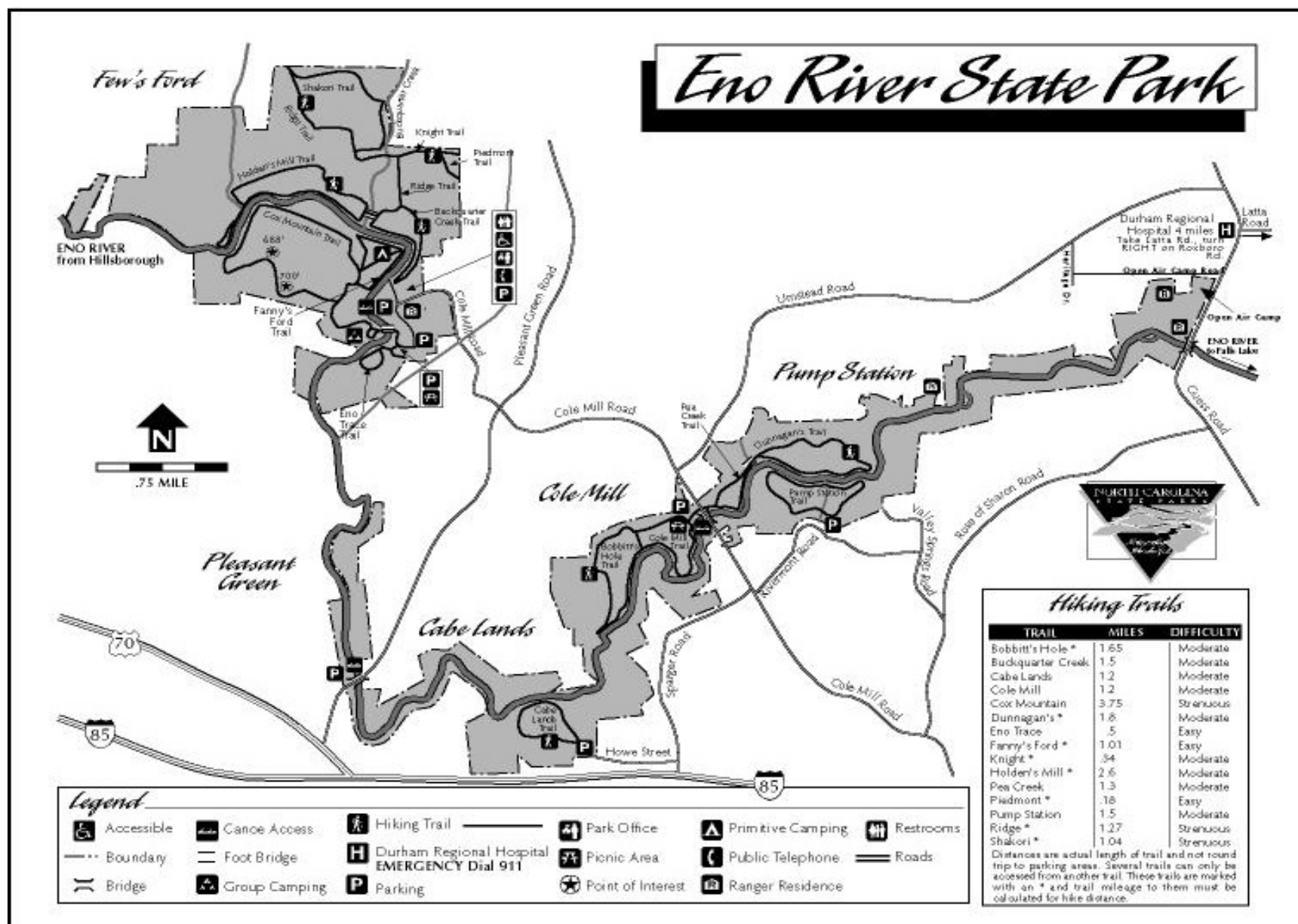


Figure I-1. Eno River State Park
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The Eno river is one of the best fishing streams in the Neuse River Basin. The river's water quality makes for good fishing along the banks. Game species include largemouth bass, bluegill, chain pickerel, crappie, and bullhead. The river is home to the Roanoke bass, also known as the red-eye, which is found only in the Eno-Neuse, the upper Tar River, the Chowan River, and the Roanoke River drainages.

Primitive family and group camping are offered at the park. These backpacking camping facilities offer secluded opportunities to experience the out-of-doors without distraction. All supplies, including water, must be packed to the sites. Both the five family camping sites and the group camp are at the Few's Ford access area. The park office, also located at Few's ford, contains visitor restrooms and a small exhibit area.

Nearby Occoneechee Mountain is the highest point in Orange County, at 887 feet. Occoneechee Mountain State Natural Area habitats support species that are rare and significant to the region. Two miles of trail wind through the area's 120 acres, and picnicking and fishing are also available. (Figure I-2)

HISTORY OF THE PARK AREA

Prior to the arrival of European settlers, the area around the Eno River was occupied by a substantial American Indian civilization. During the 17th and 18th centuries, the Occoneechee Tribe as well as a Siouan tribe called the Eno lived along the river banks. Also living in the area was the Shakori Tribe, which shared many of the Eno's habits, allowing the two tribes to carry on a long association. The Eno and Shakori tribes merged into one nation at the end of the 17th century and settled near the present location of Durham in the village of Adshusheer.

Early explorers, including the surveyor John Lawson, frequently passed through the area along the Great Indian Trading Path. In 1701, Lawson spent a short time at the Adshusheer Village in the company of the chief of the Eno Nation, Enoe Will. As a result of his travels, Lawson has provided one of the most detailed descriptions of the American Indian civilization in early America.

After the arrival of European settlers, the Native American nations in the area weakened and dispersed, some moving north into New York, others migrating south to join the strong Catawba Tribe. White settlers from Virginia, Pennsylvania, and other northern states moved into the Eno River area, using the paths and fields established earlier by the Native Americans.

The Eno River appears on the Moseley map of 1733. The name probably is from the Tuscarora Indian word "e-eno," meaning "a great way, far off."

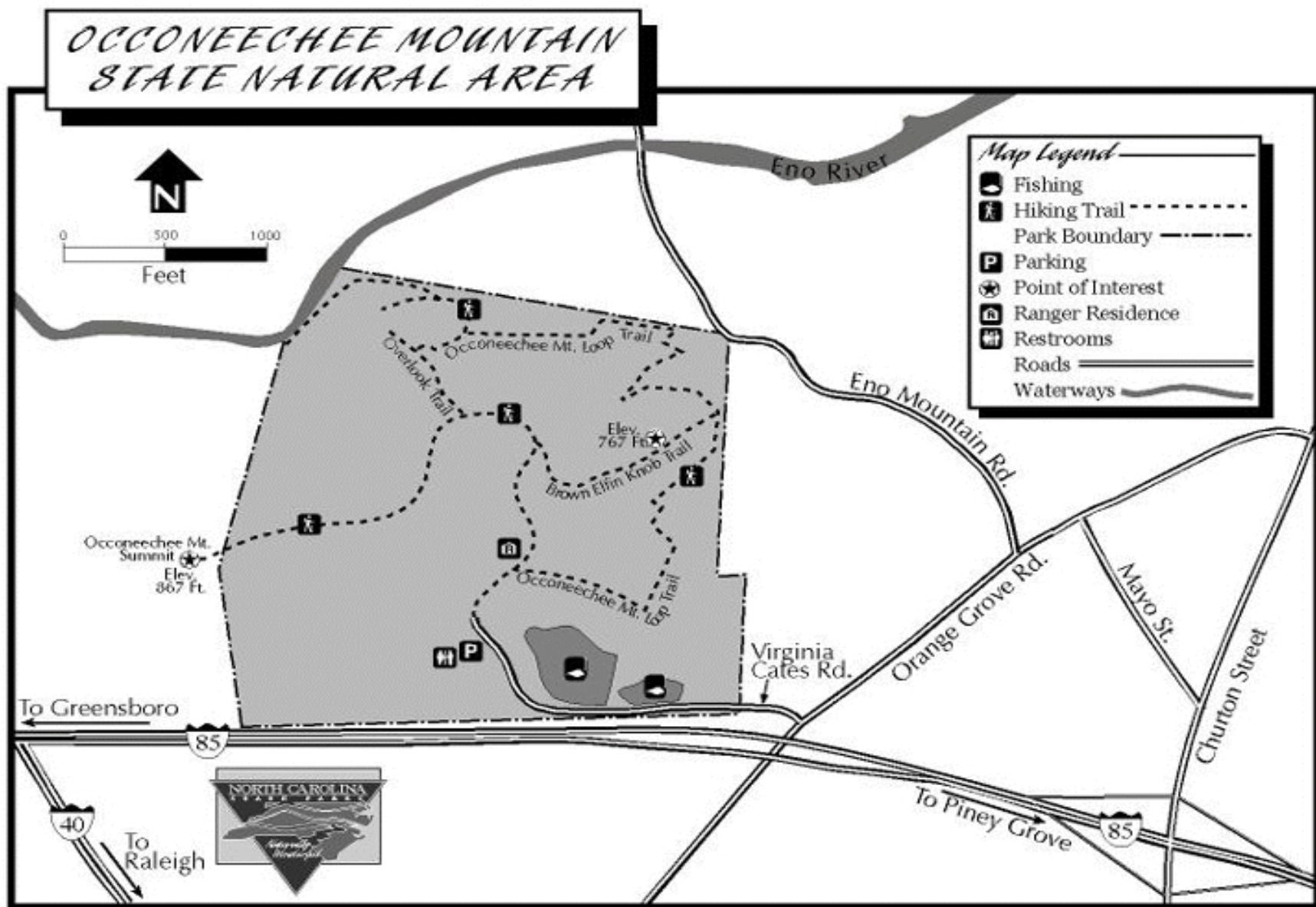


Figure I-2. Occoneechee Mountain State Natural Area

Since its founding in 1754, the town of Hillsborough, has played an important role in the history of the Eno. During this early period, Hillsborough was the state capitol. No fewer than 80 late 18th and 19th century structures, 18 of which have been listed on the National Register of Historic Places, remain standing in or near the town. Several other sites have historic ties to both the town and the river: the Dark Walk, a historic parkway along the south bank of the river; the Colonial Racepath and Akeenatzy (“Akeenatzy” is another of many early spellings of “Occoneechee”) Indian Village; and the Montrose Estate, laid out in the 1850s by English landscape gardener Thomas Paxton.

When European settlers began moving into the area from the north in the 1750s, the Eno River became an important part of area commerce. Mills sprang up all along the river, including Synnott’s Mill, the first built; William Few’s Mill (c. 1758); John Cabe Mill, the river’s most outstanding mill (c. 1799); Holden Mill (c. 1820); Berry Public Mill (c. 1850); and Berry Private Mill (c. 1854).

A post office was established in Durhamsville, renamed Durham in 1855 for Dr. Bartlett Snipes Durham (1822-58), who donated land for the railroad station. Durham, incorporated in 1866, became a center of the tobacco industry.

The Eno River became the subject of considerable debate and controversy in the 1960s and 1970s. In 1966, as a result of a recommendation by the Durham Department of Water Resources, the river was designated as a high priority source of city water and the location of a major reservoir. The city began acquiring land for the proposed impoundment, despite opposition by local landowners and environmentalists. The issue between preservationists and proponents of the city reservoir prompted the creation of the Association for the Preservation of the Eno River Valley (also known as The Eno River Association), a non-profit citizens group whose goal is the protection and preservation of the Eno River Valley. The Association was successful in its efforts to raise community support, and, as a result, the city abandoned its reservoir proposal in 1973. Because of the Association’s advocacy on behalf of the river and the river’s outstanding natural resources, the support of the Division of Parks and Recreation was gained. Through the Association’s efforts, a proposal to establish a state park along the Eno River — a sure way of protecting the river — was initiated. On May 17, 1972, the State Board of Conservation and Development approved and endorsed the concept of a state park on the Eno River. Soon after, the first parcel of land, a 300-acre tract known as the Red Hill Farm, was acquired with assistance from the Association and The Nature Conservancy and transferred to the state.

In 1975, approximately 600 acres of land originally acquired by the city of Durham for the reservoir was sold to the state for incorporation into the Eno River State Park. By this time, the state had managed to acquire scattered parcels along a 10-mile reach of river with the help of The Nature Conservancy. Including the city property, the park land then totaled about 1,100 acres.

During the summer of 1975, development of the master plan began. In August, three alternative plans were presented at a public meeting held in Hillsborough. The alternative plans illustrated, with some variation in park facility locations, a river corridor extending from Guess Road west along the river to near Hillsborough, a distance of 18 miles. Some residents, particularly those

owning land along the western portion of the river in Orange County, were upset and critical of the state's intentions, particularly of the state's use of eminent domain in acquiring land from unwilling sellers. Unrest grew as proponents of both sides debated the issue. In September, Orange County appointed a task force to study the landowners' objections to the master plan, and state park planning was curtailed at the request of county officials. In May of 1976, the Orange County Eno River Task Force presented its findings to the county, but its members remained split on the issue of eminent domain as a tool for river protection. The county subsequently adopted a policy statement that emphasized the importance of protecting the river in perpetuity and promoted both state park ownership and restricted private ownership as a means of river protection. Restrictions on the uses of privately owned land would be enforced by county conservation zoning and deed restrictions, including covenants or easements enforced by a public agency. In the policy statement, the state was requested to use adversarial condemnation only as a tool for river protection and not as a means of expanding the park.

The master planning for the park resumed in August 1976. The main objective was to complete the plan and get departmental approval so that a major cost-sharing project could be pursued with the U.S. Department of Agriculture's Soil Conservation Service (SCS). In the same month, however, a lawsuit was filed against the state alleging that the adoption of a master plan constituted an unlawful taking of property. The suit was brought by seven landowners near Hillsborough. A restraining order and injunction was placed on the master planning activity and remained in effect until November 1978, when the North Carolina Supreme Court denied a petition for discretionary review (to reverse the Court of Appeals decision favoring the state). As a result of the lawsuit, formal planning and subsequent cost-sharing projects were delayed for over two years.

The master planning for the park was resumed in December 1978. The land acquisition recommendations were scaled back in order to gain additional support, and the master plan was finally adopted in June 1979. The final version called for a 2,913-acre park rather than the larger 8,750-acre park originally conceived.

The Association for the Preservation of the Eno River Valley continued to be instrumental in the development of the state park. The association raised funds and purchased lands along the river. Its annual Eno River Festival, the major fund-raiser held each July at West Point on the Eno—a Durham city park—became increasingly popular as the years passed. These private funds became particularly significant in the park's development because state appropriations for most of the 1970s and 1980s were minimal.

Private and state funds and land donations during this time were leveraged by matching federal Land and Water conservation Fund (LWCF) grants for outdoor recreation land acquisition and facility development. Starting with an initial grant in 1973, the state applied for and received seven grants totalling approximately \$1.93 million. Not only did the federal LWCF grants help with Eno River State Park development, but LWCF grants also helped the city of Durham acquire park land along the river and develop recreational facilities. Durham received approximately \$441,000 in three grants received from 1968 to 1975.

The Eno River area has become increasingly developed since establishment of the state park. Although much of the character along the river remains unchanged, many residential subdivisions have been developed nearby. The rate of change and development is much greater and most visible in the eastern portion of the valley near Durham and in areas within proximity of Interstate 85, US 70, and Hillsborough.

In 1994, the N.C. General Assembly passed a bill that allowed the Division to apply to the Natural Heritage Trust Fund and other sources for funds to acquire Occoneechee Mountain (Chapter 324, Section 26.8D). Occoneechee Mountain, located adjacent to Hillsborough, is operated as a satellite of Eno River State Park. In May of 1995 the Division of Parks and Recreation received a grant from the N.C. Natural Heritage Trust fund to purchase 96 acres, and in January 1998 the state acquired 59 acres, its first land at Occoneechee Mountain.

The Association for the Preservation of the Eno River Valley continues to actively support the park. The 2002 Eno River Festival had attendance of approximately 30,000, and profits from the festival continue to be used for park land acquisition.

II. PARK PURPOSES

MISSION STATEMENT FOR THE STATE PARKS SYSTEM

The North Carolina state parks system exists for the enjoyment, education, health, and inspiration of all our citizens and visitors. The mission of the state parks system is to conserve and protect representative examples of the natural beauty, ecological features, and recreation resources of statewide significance; to provide outdoor recreation opportunities in a safe and healthy environment; and to provide education opportunities that promote stewardship of the state's natural heritage.

ENO RIVER STATE PARK PURPOSE STATEMENT

Efforts to establish a state park along the Eno River began in 1965 in response to the city of Durham's proposal to build a reservoir in the river valley. A group of concerned citizens led a campaign to save the Eno and formed the Association for the Preservation of the Eno River Valley. The Association proposed establishment of a state park, and in May of 1972, the State Board of Conservation and Development approved the idea. Durham subsequently dropped its efforts to construct the reservoir, and in August of 1973, the first land for the park was acquired with assistance from the Association and The Nature Conservancy. Much of the park is now a Dedicated Nature Preserve.

With its abundance of pools, riffles, and rocky bars, the river itself is the most significant biological feature in the Eno River State Park. Along with the diversity of aquatic habitats, the relatively undisturbed vegetated corridor provides excellent protection for the water quality of the Eno River. As a result of these unique features, a number of rare animals are found within the park, including the Atlantic pigtoe (*Fusconia masoni*), Neuse River waterdog (*Necturus lewisi*), and Roanoke bass (*Ambloplites cavifrons*).

Numerous heath bluffs occur along the Eno River and are particularly unusual because of the dominance of Catawba rhododendron (*Rhododendron catawbiense*), which is typically found at high elevations in the mountains. At least one regionally rare species, the redback salamander, (*Plethodon cinereus*) is associated with these heath bluffs. The park also contains fairly extensive tracts of hardwood forests typical of those that once covered most of the Piedmont. A wide variety of upland wildlife species inhabit these forests. Unfortunately, large blocks of hardwood forest are very uncommon in this part of the state and are becoming increasingly rare. The forests and other habitat areas within the park are connected to other protected lands, including the Camp Butner and Falls of the Neuse Game Lands, by the unbroken Eno River corridor.

Eno River State Park is an important recreational resource. The linear park offers easy access, particularly for visitors from increasingly urban areas nearby. The park's many and varied recreational opportunities include hiking, canoeing, backpacking, picnicking, and fishing. The river and park lands contain resources ideal for environmental education activities and interpretation of the area's rich cultural heritage.

The park preserves and protects the varied scenic resources of the narrow and steep-walled river valley. Outstanding scenic views include river bluffs, whitewater rapids, quiet meanders, rock outcroppings, rolling landscapes, historic mill sites, wildflowers, flowering shrubs, and woodlands dominated by pine, cedar, maple, dogwood, oak, and hickory.

The Eno River valley is rich in cultural resources. The Eno River and surrounding lands were home to widespread American Indian civilizations. A Siouan tribe named Eno and the Shakori tribe shared this river valley in harmony. These tribes eventually merged into one nation at the end of the seventeenth century and settled near the present location of Durham. The Occoneechee tribe lived along the river in the late 1600' s and early 1700' s. The Eno River has also been an important part of commerce for European Americans since the 1750' s when settlers began moving to the area from northern states. There are a number of old mill sites along the river, of which Synnott's Mill is the oldest. The most outstanding mill is the John Cabe Mill, built in 1779. In addition, William Few's Mill (c.1758), Holden Mill (c.1820), Berry Public Mill (c.1850), and Berry Private Mill (c.1854), among others, are located along the river. As would be expected, old homesites and cemeteries are found throughout the Eno River Valley.

Within this part of the Piedmont, the narrow, steep-walled Eno River Valley has frequent outcroppings and numerous rapids and is a unique feature on the landscape. These geological features result from the predominance of metamorphosed volcanic rock that is more resistant to erosion than other types of rock in the area. Since there is no evidence of ancient volcanic vents, the metamorphosed volcanic rock within the Eno River State Park may have erupted from faulted areas known as fissures that were active periodically for millions of years.

Eno River state Park exists so that its valuable biological, recreational, scenic, archaeological, and geological resources will be protected. The Division of Parks and Recreation is charged with preserving these values and providing experiences that promote pride in and understanding of this treasured natural heritage.

III. SUMMARY OF INTERPRETIVE THEMES

The 1987 State Parks Act defines the purposes of the state parks system. It establishes that:

The State of North Carolina offers unique archaeological, geologic, biologic, scenic and recreational resources. These resources are part of the heritage of the people of this State. The heritage of a people should be preserved and managed by those people for their use and for the use of their visitors and descendants.

It further provides that:

Park lands are to be used by the people of this State and their visitors in order to promote understanding of and pride in the natural heritage of this State.

One of the best methods of meeting these purposes is through environmental education. The definition of environmental education as set forth in *The North Carolina Environmental Education Plan* is given below.

Environmental education is an active process that increases awareness, knowledge, and skills that result in understanding, commitment, informed decisions, and constructive action to ensure stewardship of all interdependent parts of the earth's environment.

Eno River State Park is an important provider of environmental education for public and private schools, summer camps, youth and adult groups and clubs, and the general public. Through the Environmental Education Learning Experience (EELE), *Living Water*, participants gain an awareness of the park's resource, the Eno River, and are asked to make informed decisions based on their newly acquired skills. The demand for environmental education at the park is increasing. As the population in the Triangle region continues to grow, that demand will increase many fold.

The primary interpretive themes for Eno River State Park, in priority order, are river basin ecology, cultural history, wildlife habitats and corridors, and unique geologic features.

PRIMARY INTERPRETIVE THEMES

River Basin Ecology

The Eno River watershed is part of the Neuse River Basin. Program topics in this theme area include biological diversity, habitat diversity, and water quality. Interpretive programs focus on the aquatic life in the Eno River watershed and how this life serves as an indicator of water quality. Through environmental education programs such as the park's EELE, park staff encourage thoughtful stewardship by helping participants realize their effect on water quality. Due to the popularity of river ecology programs, park staff would like to expand the current

EELE to include more grade levels and more diverse activities on water quality.

Cultural History

This theme highlights the area's human history with emphasis on the colonial period and late 1800s – in particular, mills, mill sites and milling families on the Eno River. Other historical programs deal with agriculture, African-American, roads and fords, and American Indian groups such as the Eno as seen through artifacts found in the river basin.

Wildlife Habitats and Corridors

As development continues in Orange county, few examples of large contiguous forest remain. When habitat is fractured by roads, shopping malls, and subdivisions, many wildlife species – such as the black bear – are unable to meet their needs for food, water, shelter, and space. Without forested corridors or travelways, wildlife populations become disconnected and genetically unstable. Interpretive programs in this theme area demonstrate how the park provides large blocks of forested habitat as well as corridors that connect diverse populations.

Unique Geologic Features

Lying within the Carolina Slate Belt, the park contains many unique geologic features, such as old volcanic mud flows at Cates Falls and spherulites–crystal clusters in a rhyolite lava flow–along the Bobbitt's Hole Trail. The falls and rapids in the Eno River are caused by metavolcanic rocks that are very resistant to erosion. With the addition of the Occoneechee Mountain Natural Area and nearby quarries, park staff have increased opportunities for geological programming.

SECONDARY INTERPRETIVE THEMES

Secondary themes for the park support and embellish the primary themes; they are listed below.

- Astronomy and other night programs
- Area wildlife (birds, herps, insects, mammals)
- Wildflowers – local species, rare species and exotic plants
- Nature photography
- Park history
- Recreation - fishing, canoeing, hiking, backpacking, etc.
- Park resources and management; e.g., southern pine beetles, Hurricane Fran, floods, fire, protection of rare and critical habitats, water quality and quantity, etc.
- Succession of tree and shrub communities

IV. PARK AND RECREATION DEMAND AND TRENDS

ANNUAL VISITATION TRENDS

As shown in Figure IV-1, annual visitation recorded at Eno River State Park has increased from 136,967 in 1987 to 319,393 in 2001. The visitation on a year-to-year basis has been somewhat unpredictable, but the overall trend shows an increase in park use from 1987 to 2002 at a compounded annual rate of 5.81 percent.

Visitation is taken using vehicle traffic counters. Prior to 1994, a multiplier of four persons per vehicle was used. In 1994, vehicle counters were added at the Pleasant Green Access and Cabe Lands to go with those already in place at Few's Ford and Cole Mill. At the time the additional two vehicle counters were added, the persons-per-vehicle multiplier was lowered to 3.5 to more accurately reflect the average visitor group size.

In addition to recorded visitation, many park visitors are able to visit and enjoy the park from neighborhood accesses and other entry points without being counted. While this has always been true, increased unrecorded visitation has no doubt occurred over the years as the area around the park has become more developed. The park is easily accessed by foot from many locations along the river.

MONTHLY VISITATION TRENDS

Monthly visitation at Eno River follows a pattern similar to many state park units (Figure IV-2). In the winter, cold weather keeps the visitation down, and with warmer weather, visitation increases. Visitation is highest in April when, with its array of spring flowers and new growth, the river is perhaps most attractive. Visitation remains high throughout the spring and summer and well into fall. Because of its proximity to urban development and the small number of camping facilities, visitation never drops as severely in the winter months as it does in most state parks.

Because Eno River's monthly visitation is high from March through October, the use of seasonal personnel to meet peak demand is less effective than at many parks where the peak visitation season is shorter and much higher relative to other times of the year. Even so, this monthly visitation pattern suggests that permanent staff need to be available to serve visitors during the months of higher visitation. Where possible, work and vacation scheduling should be undertaken with this in mind. Part-time and seasonal personnel should continue to be used in the busier March-through-October period as well.

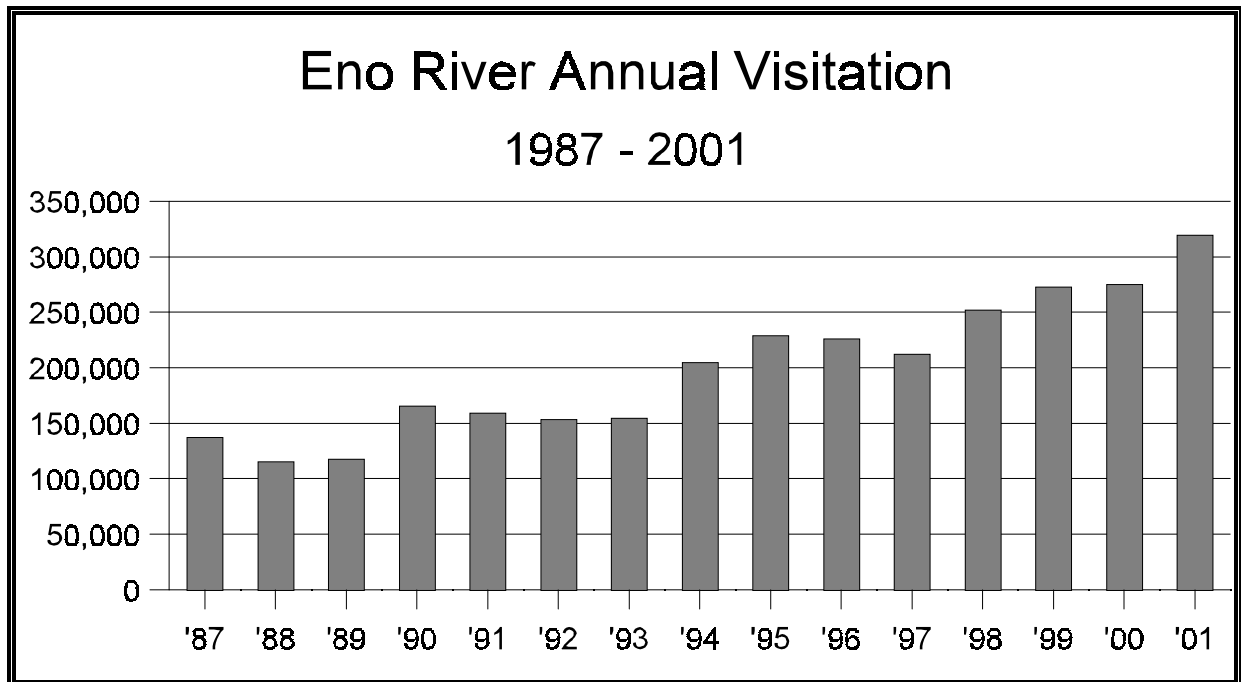


Figure IV-1. Annual Visitation

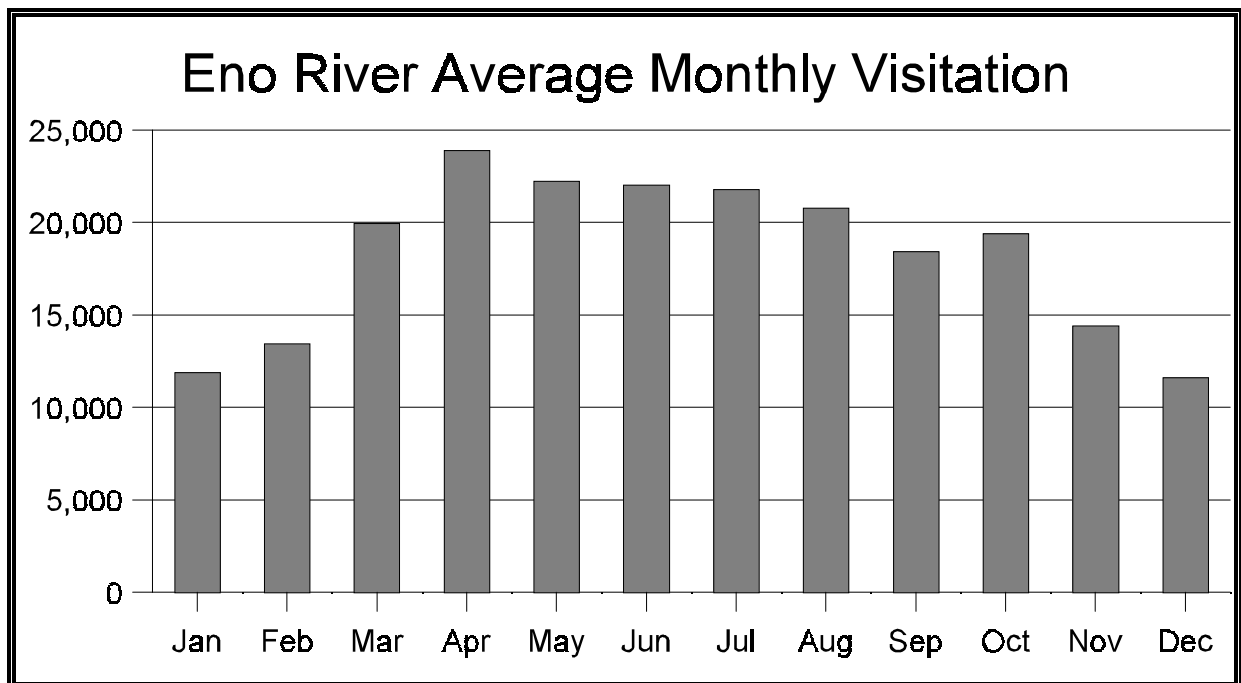


Figure 3

DEMOGRAPHIC TRENDS

The primary service area for Eno River State Park includes Durham and Orange counties, where the park is located, and surrounding counties. Eno River is located in the Research Triangle region, an area anchored by world-class universities, medical centers, state government, and firms in leading technological and medical fields. Its diverse economy has proven more stable than most economies in other regions of the state and nation during the past twenty years. The region's combination of economic vitality, educational opportunity, mild climate, and general quality of life caused it to be lauded as "The Best Place to Live in America" by *Money* magazine in 1994. *Fortune* magazine called nearby Raleigh "The Best City for Business" in 1993.

Unlike many metropolitan areas, the Research Triangle region is not dependent upon one central city. Raleigh and Durham are the largest Research Triangle cities. Many smaller towns and numerous rural communities comprise the large regional community. In 1990, over 145,000 residents crossed a county line to get to work, reflecting a sense of larger regional community. This sense of regional community is enhanced by the Raleigh-Durham International Airport, the Research Triangle Park in Durham and Wake counties, and by Jordan Lake and Falls Lake — the area's large recreation and water-supply lakes, which extend across several counties.

Service is the leading industry sector in the area, accounting for over 29 percent of jobs. Raleigh is the state capital, so government employment is a higher-than-usual 25 percent. Trade is also 25 percent of employment, while manufacturing accounts for 19 percent.

The area's economic success is reflected in incomes. The estimated 1995 median family income in the Research Triangle region is \$34,563. The metro area's estimated 1995 median family income of \$46,800 surpasses the next highest North Carolina metro area — Charlotte — by \$4,100 or 12 percent.

The many resources and advantages of living in the Research Triangle region have resulted in robust population growth, a trend that is expected to continue. Table IV-1 shows the population growth and projected growth from 1980 through 2010 for Durham, Orange, and surrounding counties. As the area's population grows, Eno River State Park will face increasing pressure from development and public use.

From 1980 to 2000, the area's rapidly growing population increased at a compounded annual rate of 2.68 percent. The annual rate of growth is expected to slow from the year 2000 to 2010 to approximately 2.41 percent annually. Although slower, this rate of growth is still considered rapid, however, and it will result in 332,162 more persons living in Alamance, Chatham, Durham, Granville, Orange, Person, and Wake counties in 2010 than 2000.

Table IV-1. Eno River Area Population Growth & Projected Growth 1980 - 2010*

COUNTY	1980	1990	2000	2010
Alamance	99,319	108,213	130,800	152,758
Chatham	33,415	38,759	49,329	59,336
Durham	152,235	181,835	223,314	267,218
Granville	34,043	38,345	48,498	58,532
Orange	77,055	93,851	118,227	142,913
Person	29,164	30,180	35,623	40,678
Wake	301,429	423,380	627,846	844,364
TOTAL:	726,660	914,563	1,233,637	1,565,799

* Source: U. S. Census, North Carolina State Demographics

Because of the economy and general attractiveness of the region as a place to live, in-migration has played a significant role in the area's population growth. Table IV-2 shows migration into the Eno River area from 1980-1990. In-migration accounted for 71.77 percent of the area's population growth during this period and has been the chief source of population growth for all of the counties in the area except for Person County. This trend is expected to continue, but at a slower rate.

Table IV-2. Migration into the Eno River Area 1980 - 1990*

County	1980 Population	1990 Population	Population Increase 1980-1990	Births	Deaths	Net In-migration	% Pop. Increase Due to In-Migration
Alamance	99,319	108,213	8,894	13,039	9,691	5,546	62.36%
Chatham	33,415	38,759	5,344	5,180	3,180	3,344	62.57%
Durham	152,235	181,835	29,600	24,183	13,771	19,188	64.82%
Granville	34,043	38,345	4,302	4,762	3,672	3,212	74.66%
Orange	77,055	93,851	16,796	10,019	4,848	11,625	69.21%
Person	29,164	30,180	1,016	3,825	2,749	(60)	-5.91%
Wake	301,429	423,380	121,951	51,198	21,256	92,009	75.45%
Area	726,660	914,563	187,903	112,206	59,167	134,864	71.77%

* Source: U.S. Census

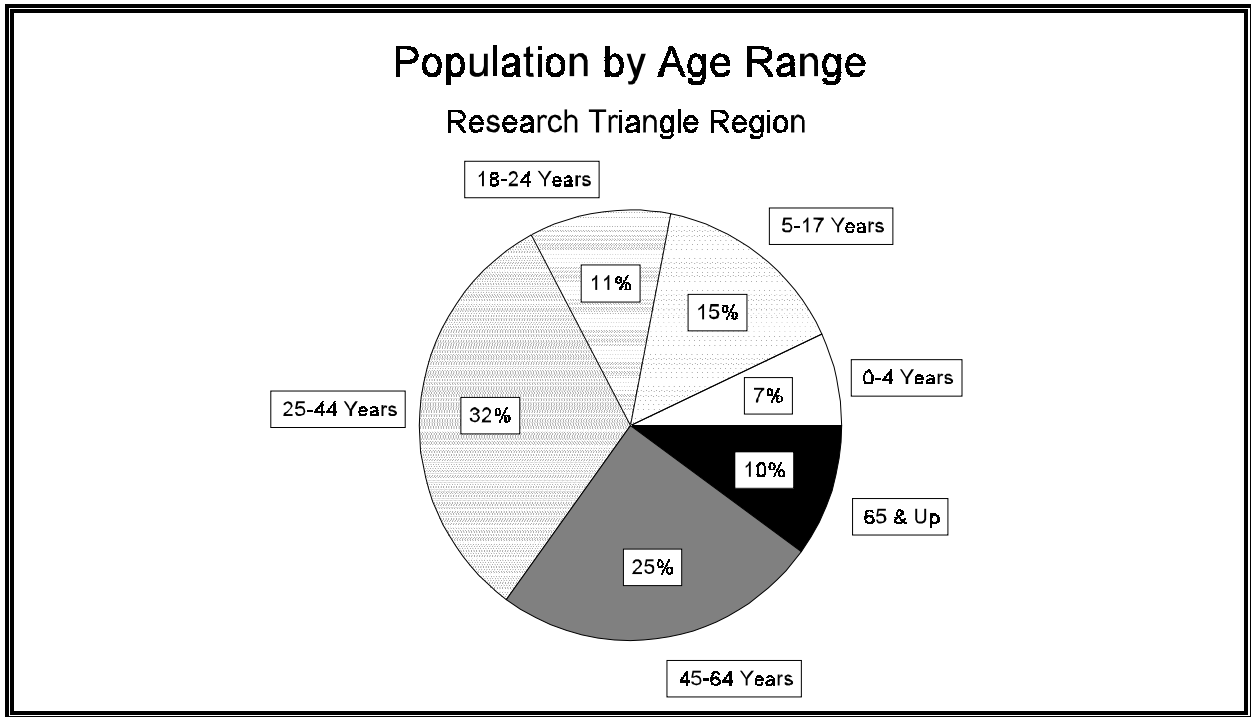


Figure IV-3. Population by Age Range

Source: 1990 US Census

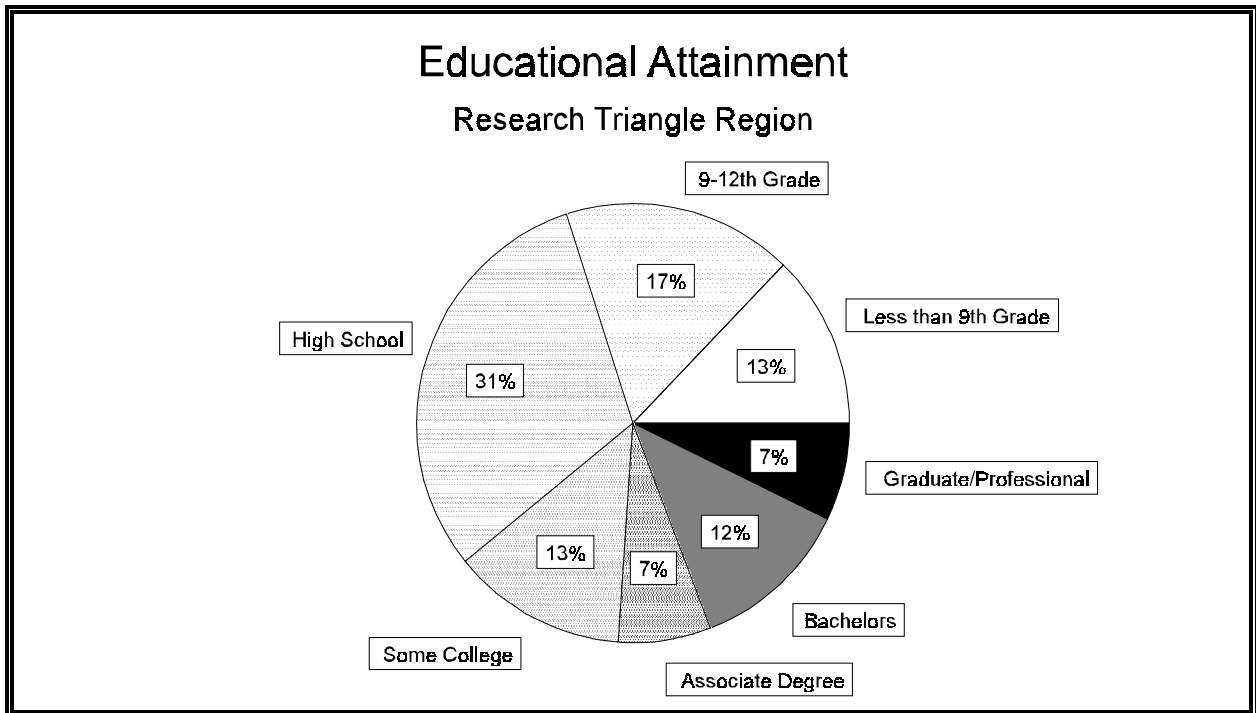


Figure IV-4. Educational Attainment

Source: 1990 US Census (Age 25 and Older)

The Research Triangle region has a relatively diverse, young, and highly educated population (Figures IV-3 and IV-4). Highly educated people tend to participate more frequently in outdoor recreation. Twenty-seven percent of the population 25 or older in 1990 had a bachelor's degree or higher, and 12 of every 1,000 adults 25 or older had a Ph.D. The area has three major research universities — Duke, UNC at Chapel Hill, and N.C. State University — and nine other colleges and universities with enrollments of almost 79,000.

According to the Office of State Budget and Management, outside of catastrophic events such as a depression or outbreak of a rapidly spreading, incapacitating disease, the most influential forces affecting the need for state services are the growth and shifts in population. As the region's population grows, more demand can be anticipated for outdoor recreation areas and facilities simply because there will be more people seeking recreational opportunities. Without an increase in recreational areas and facilities, existing ones can be expected to become increasingly crowded. In addition, as the population grows, concomitant development removes forests, farms, and other open areas that help meet outdoor recreation needs.

Population shifts are also taking place. These shifts will not be so sudden that they will require modification of the five-year plans for Eno River or other parks, but they are worth noting for their longer-term implications.

Surprising most demographers, the portion of Americans and North Carolinians age 65 and older failed to increase during the 1990s, the first time since the Census Bureau began its count that the seniors' share of the population fell nationally. The percentage of elderly in North Carolina dropped from 12.1% in 1990 to 12% in 2000. Over the next ten years, the 65-and-over ranks will likely expand no faster than the rest of the population, a result primarily due to declining births that accompanied the Great Depression in the 1930s.

With the leading edge of the post-war baby-boom generation reaching 55, the median age in North Carolina rose from 33.1 in 1990 to 35.3 years in 2000. In the next decade, as the oldest baby-boomers hit 65, the median age will continue to rise, heralding a rapid jump in the elderly population.

Between 2010 and 2020, the number of citizens 65 and older is projected to increase by 35 percent. The 2000 census numbers hint at the future, showing that the fastest gain of any age group occurred in the 45-to-54-year-old segment, up 50 percent in North Carolina during the 1990s. Although not in the immediate future, this population shift, when it occurs, will produce a flood of retirements.

The Census 2000 report also showed a big increase in the number of seniors living past age 85. The number of Americans age 85 and older grew 38 percent during the 1990s. With improved medical care, drug discoveries and technological innovations, this age group is projected to continue increasing.

In the future, longer lives are more likely to be healthy. Even with millions more people reaching retirement age, the number of people in nursing homes declined nationwide during the 1990s, according to surveys by the Duke Center for Demographic Studies. The Center also found that Medicare recipients are much less likely to be disabled than 20 years ago.

Eno River and other state park units are expected to see increased visitation by the elderly as these trends emerge. The elderly already are and will become an increasingly vital political force. While parks have and are likely to continue to have a much lower concern for the elderly than health care, nursing homes, activities of daily living and protective services, the amount of attention paid to parks and the expectations for services catering to the elderly will be increasing.

The character of society is changing in other ways as well. Traditional families – married couples with children younger than 18 – fell during the 1990s to 22.6 percent of all households statewide from 25.2 percent. Households headed by women alone make up an increasing percentage of all families with children younger than 18. Female-headed households with children younger than 18 rose from 20.2 percent of all North Carolina family households in 1990 to 22.8 percent in 2000. (The numbers reflect only family households, not all households.)

The number and percentage of Hispanic population increased dramatically in North Carolina in the 1990s, rising from 1.2 percent in 1990 to 4.7 percent in 2000. Communication problems between park staff and non-English speaking visitors occur from time-to-time and have increased as the Hispanic population has grown.

Concomitant with population growth and a prosperous economy, large amounts of land are being developed across the state, particularly in metropolitan areas. Between 1992 and 1997, 781,500 acres of land were developed statewide, roughly 156,000 acres annually. Moreover, the pace of development has increased. From 1982 to 1992, an average of 93,580 acres per year was developed. (*Adding It Up: Growth Trends and Policies In North Carolina*. Brookings Institution. July, 2000)

As North Carolina develops, the struggle to balance economic and population growth with the preservation of the state's natural heritage increases. State parks such as Eno River will become increasingly important as contributors to a healthy quality of life for the state's citizens and visitors.

VISITOR INFORMATION

In 1987 the United States Forest Service was contracted by the Department to conduct a Public Area Recreation Visitors Survey (PARVS) for the North Carolina state parks system, designed to identify visitor socio-economic characteristics and economic contribution to the state's economy. While Eno River State Park was not one of the eight parks involved in the survey, general information concerning state park visitors is useful in assessing visitation trends at the park.

Why do people visit state park units? The convenient location was cited by 31 percent of the respondents; 25 percent thought other areas were too crowded; 21 percent liked the quality facilities; 8 percent wanted to try a new area; 7 percent enjoyed the scenic beauty; and 6 percent came to see the attraction.

More than one third of state park visitors come from within a 30-mile radius (37 percent), while 17 percent come from 30 to 60 miles away. Survey respondents indicated that the parks were their sole destination 86 percent of the time. While many visitors come from nearby, the average one-way distance traveled was 139 miles. Approximately 25 percent of state park visitors come from out of state. These visitors averaged 4.1 trips per year to North Carolina state parks.

Seventy-eight percent of those surveyed indicated that they were return visitors. The average number of return trips per year was six. Sixty-one percent of visitors statewide came with family members, 16 percent with friends, and 7 percent with both family and friends. Ten percent of visitors came alone. Visitors also came in small numbers in organized groups and multiple families.

PARVS data indicates that 16.8 percent of groups surveyed used more than one car, and that the average number of persons per car was 3.0. The average age of the park visitor was 38.2 years. The age distribution was as follows:

Table IV-3 Percent of Visitors by Age Group

<u>Under 6</u>	<u>6-12</u>	<u>13-18</u>	<u>19-25</u>	<u>26-35</u>	<u>36-45</u>	<u>46-55</u>	<u>56-65</u>	<u>Over 65</u>
6.7	11.6	10.6	12.5	20.1	16.9	0.9	7.3	4.4

Since over 18 percent of visitors are under the age of 13, a demand exists for children's programs and facilities. Approximately 12 percent of visitors are 56 and older. This older segment of the general population will be increasing, and as it does, demand for improved quality, accessibility, and safety should increase.

OUTDOOR RECREATION PARTICIPATION IN NORTH CAROLINA

The five most popular outdoor recreation activities in North Carolina are walking for pleasure, driving for pleasure, viewing scenery, participating in beach activities, and visiting historical sites. Three out of every four households participated in walking for pleasure at least once in the past 12 months (Table IV-4). In addition to the five most popular activities, over fifty percent of the households responding to a 1989 survey participated at least once in the following activities: swimming (in lakes, rivers, or oceans), visiting natural areas, picnicking, attending sports events, visiting zoos, and freshwater fishing.

The North Carolina Outdoor Recreation Participation Survey was mailed to 3,100 randomly selected residents in the spring of 1989. Forty-five percent, or 1,399 people, returned completed surveys. Each person receiving the survey was asked to estimate the number of times that household members had participated in each of 43 activities. The survey results provide good insight into the current participation of North Carolinians in a wide range of outdoor recreation activities. The survey results also closely mirror those of the National Survey on Recreation and the Environment conducted in 1994-1995.

Table IV-4. Outdoor Recreation Activities Ranked by Popularity.

RANK	ACTIVITY	PERCENTAGE OF HOUSEHOLDS PARTICIPATING
1.	Walking for Pleasure	75%
2.	Driving for Pleasure	72
3.	Viewing Scenery	71
4.	Beach Activities	69
5.	Visiting Historical Sites	62
6.	Swimming (in Lakes, Rivers, and Oceans)	54
7.	Visiting Natural Areas	53
8.	Picnicking	52
9.	Attending Sports Events	52
10.	Visiting Zoos	51
11.	Fishing - Freshwater	50
12.	Use of Open Areas	41
13.	Swimming (in Pools)	40
14.	Fishing - Saltwater	38
15.	Attending Outdoor Cultural Events	35
16.	Bicycling for Pleasure	32
17.	Other Winter Sports	31
18.	Camping, Tent or Vehicle	29
19.	Softball and Baseball	28
20.	Hunting	28
21.	Use of Play Equipment	28
22.	Power Boating	26
23.	Trail Hiking	26
24.	Jogging or Running	24
25.	Basketball	24
26.	Nature Study	22
27.	Golf	22
28.	Target Shooting	20
29.	Water Skiing	19
30.	Camping, Primitive	14
31.	Tennis	14
32.	Use Motorcycles, Dirt Bikes, ATV' s	13
33.	Use Four Wheel Drive Vehicles	13
34.	Canoeing and Kayaking	13
35.	Horseback Riding	12
36.	Volleyball	12
37.	Downhill Skiing	12
38.	Football	11
39.	Soccer	7
40.	Sailboating	7
41.	Skateboarding	6
42.	Cross Country Skiing	2
43.	Windsurfing	1

PRIORITIES OF PUBLIC OUTDOOR RECREATION FUNDING

The North Carolina Outdoor Recreation Survey asked residents a series of questions in order to identify and rank order future demand for various types of public outdoor recreation activities. Future demand was determined by asking them which activities they would have tried more often had adequate facilities been available. Respondents were then asked to rank these activities in order of importance. A scoring system was used assigning each activity a rating of high, moderate or low future demand based on the survey results.

In the second part of the analysis, the respondents' level of support for publicly funded outdoor recreation activities was determined by asking them to identify and rank those activities to which government should give highest priority when spending public money. The same scoring system used to analyze unmet demand was then applied to the survey results, with each activity receiving a high, moderate or low rating in public support for public funding.

In the final part of the needs analysis, the two ratings for each activity were combined to produce a score from one to nine that reflected both future demand and public funding priorities. The activities that ranked high in both future demand and support for public funding received the highest priority in the needs assessment. Support for public funding was given higher priority than expressed demand (Table IV-5).

Table IV-5. Priorities for Future Outdoor Recreation Activities

ACTIVITY	CODE	FUTURE DEMAND	SUPPORT FOR PUBLIC FUNDING
Walking for Pleasure	1	High	High
Camping, Tent or Vehicle	1	High	High
Picnicking	1	High	High
Beach Activities	1	High	High
Fishing - Freshwater	1	High	High
Attend Outdoor Cultural Events	1	High	High
Visiting Natural Areas	2	Moderate	High
Use of Play Equipment	2	Moderate	High
Visiting Zoos	2	Moderate	High
Visiting Historical Sites	2	Moderate	High
Bicycling for Pleasure	3	High	Moderate
Swimming (in Pools)	3	High	Moderate
Viewing Scenery	4	Moderate	Moderate
Hunting	4	Moderate	Moderate
Trail Hiking	4	Moderate	Moderate
Use of Open Areas	4	Moderate	Moderate
Target Shooting	4	Moderate	Moderate
Swimming (Lakes, Rivers, Ocean)	4	Moderate	Moderate
Fishing - Saltwater	4	Moderate	Moderate

AREA OUTDOOR RECREATIONAL OPPORTUNITIES

The Eno River area and surrounding counties are home to a variety of outdoor recreation areas. A brief description of some of these follows.

West Point on the Eno (Durham County)

West Point on the Eno is a 350-acre park operated by the city of Durham. Located off Roxboro Road, the park is a re-creation of the 19th century West Point Mill community. In addition to tours of a historic farmhouse, a working grist mill, and the museum of turn-of-the-century photographer Hugh Mangum, visitors can picnic, hike, raft and canoe. The city of Durham also operates many other parks.

Sarah P. Duke Memorial Gardens (Durham County)

The extensive gardens and a native plant area are located on the grounds of Duke University.

Duke Homestead State Historic Site (Durham County)

The historic site includes the homestead itself, a tobacco museum, farm buildings, historical exhibits, and a video presentation of the history of tobacco.

Bennett Place State Historic Site (Durham County)

This historic site marks the place of the largest troop surrender of the Civil War. On April 26, 1865, Generals Joseph E. Johnston and William Sherman met in a small farmhouse here for negotiations that led to the capitulation of Johnston's troops. The visitor center offers a multi-media show and historical exhibits.

Duke Forest (Durham & Orange Counties)

Duke Forest is Duke University's privately owned research forest consisting of 8,300 acres in Durham and Orange counties. In addition to educational use, the forest also provides recreational opportunities.

Falls Lake (Wake & Durham Counties)

Falls Lake is a 12,490-acre recreational flood-control and water-supply lake. The N.C. Division of Parks and Recreation operates Falls Lake State Recreation Area. The public-use sites on the lake offer boat launching, camping, hiking, picnicking, swimming, and fishing. There is also a marina operated by a concessionaire. The Corps of Engineers and N.C. Wildlife Resources Commission also operate facilities at the lake.

Game Lands (Chatham, Durham, Wake, & Lee Counties)

The N.C. Wildlife Resources Commission operates game lands within the region. These include the 986-acre Chatham Game Land, the 40,626-acre New Hope Game Land at Jordan Lake, the 2,421-acre Lee Game Land, the 7,790-acre Shearon Harris Game Land, the 7,109-acre Person Game Land, the 841-acre Vance Game Land, and the 43,554-acre Butner-Falls of the Neuse Game Lands.

N.C. Botanical Gardens (Orange County)

This 307-acre botanical garden contains the largest collection of native plants and herbs in the Southeast. Located in Chapel Hill, it offers nature trails, walking tours, classes, plant sales, and a reference library.

William B. Umstead State Park (Wake County)

This 5,481-acre state park has forests and plant communities typical of the Piedmont Province of North Carolina. It also has excellent natural species diversity, containing over 800 plant species, 60 species of reptiles and amphibians, over 185 bird species, and over 20 mammal species. It offers an extensive trail system, three small lakes, nonmotorized boating, individual and group camping, picnicking, and fishing.

Jordan Lake State Recreation Area (Chatham County)

The N.C. Division of Parks and Recreation operates nine major sites at the 13,900-acre Jordan lake. The lake is a major statewide recreational resource. A variety of recreational facilities encourage use of the lake and provide opportunities for fishing, swimming, sunbathing, motor boating, waterskiing, wind surfing, sailing, picnicking, hiking, and natural and cultural resource interpretation. Tent and trailer, group, primitive, and recreational-vehicle camping offer a variety of overnight recreational opportunities. A privately operated marina is also available at the lake.

Jordan Lake Educational State Forest (Chatham County)

The N.C. Division of Forest Resources operates the 420-acre educational state forest. Recreation facilities include two miles of trail and a picnic shelter and picnic area.

Harris Lake (Wake and Chatham Counties)

Harris Lake, a 4,150-acre lake in Chatham County that was constructed to provide cooling water for the Shearon Harris Nuclear Power Plant, is owned by Carolina Power and Light Company. It is also used for recreational purposes.

Clemmons State Forest (Johnston & Wake Counties)

This 314-acre educational state forest demonstrates the many uses of woodlands — wildlife protection, timber products, education, and recreation. It offers group tent camping, hiking, picnicking, and forestry and nature study.

Alamance Battleground (Alamance County)

The 40-acre Alamance Battleground State Historic Site offers interpretation of the 1771 battle between back county farmers called the ‘Regulators’ and the Colonial militia of Royal Governor Tryon. A monument, historical markers, the home of one of the Regulators, and a visitor center/museum are at the site.

Haw River (Chatham and Alamance County)

The Haw River is the most popular canoeing river in the Piedmont because of its white water. There are miles of Class 2 rapids and, occasionally, more difficult rapids. The sections of the river through Chatham County to Jordan Lake are particularly popular. Each spring, the Haw River Festival is held at three locations along the river. It includes music, food, arts & crafts, and environmental exhibits.

Raven Rock State Park (Harnett County)

Raven Rock State Park, near Lillington, consists of over 3,000 acres of park land and is noted for its striking rock formation, extensive forest, unique plant life, and rolling terrain. The park offers camping, bridle trails, canoe camping along the Cape Fear River, picnicking, fishing, hiking, and nature study.

Mayo Lake and Hyco Reservoir (Person and Caswell Counties)

The 3,750-acre Hyco Lake and the 2,800-acre Mayo Lake are located just south of the Virginia state line. The popular reservoir/recreation areas were built by Carolina Power and Light company. They offer hunting, fishing, camping, hiking, and water sports.

Kerr Lake State Recreation Area (Vance County)

The N.C. Division of Parks and Recreation operates seven recreation areas at the 49,000-acre lake. Over 1,000 camping sites, picnicking, fishing, swimming, and other water sports are offered. Two marinas offer services for boaters and campers, including cabins.

Other Outdoor Recreation Opportunities

The region's county and municipal governments offer a variety of outdoor recreational areas and facilities. These include smaller lakes that offer recreational activities, such as Lake Michie and Little River Reservoir in Durham County; Cane Creek Reservoir and University Lake in Orange County; and lakes Crabtree, Wheeler, Johnson, and Benson in Wake County.

V. SUMMARY OF LAWS GUIDING PARK MANAGEMENT

There are many federal and state statutes, state and federal executive orders, and administrative rules and policies that govern the operation of the state parks system. This chapter includes a brief discussion of the primary legal basis for the existence and operation of the state parks system. It also includes other legal issues of particular concern at Eno River State Park.

STATE LEGAL MANDATES

North Carolina Constitution

Article XIV, Section 5 of the North Carolina Constitution sets overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The amendment reads in part as follows:

It shall be the policy of this State to conserve and protect its lands and waters for the benefit of all its citizenry, and to this end it shall be a proper function of the State of North Carolina and its political subdivision to acquire and preserve park, recreation, and scenic areas, to control and limit the pollution of our air and water, to control excessive noise, and in every other appropriate way to preserve as a part of the common heritage of this state its forests, wetlands, estuaries, beaches, historical sites, open land, and places of beauty.

State Parks Act

The State Parks Act (G.S. 113-44.7 through 113-44.14) sets forth a mission statement for the state parks system. It states that the system functions to preserve and manage representative examples of significant biological, geological, scenic, archaeological, and recreational resources, and that park lands are to be used by the people of the state and their visitors and descendants in order to promote understanding of and pride in the state's natural heritage.

The State Parks Act also calls for development and periodic revisions of a System Plan to achieve the mission and purpose of the state parks system in a reasonable, timely, and cost-efficient manner. The Act describes System Plan components and requires that public participation be a component of plan development and revisions.

The State Parks Act also calls for the classification of park resources and development of general management plans (GMPs) for each park. GMPs are to include a statement of park purpose, an analysis of major resources and facilities, and a statement of management direction.

Powers and Duties of the Department of Environment and Natural Resources

The Department is authorized to make investigations of the resources of the state and to take such measures as it may deem best suited to promote the conservation and development of such resources. In addition, the Department may care for state forests and parks and other recreational areas now owned, or to be acquired by, the state. (G.S. 113-8)

State Nature and Historic Preserve Dedication Act

The State Nature and Historic Preserve Dedication Act (G.S. 143-260.6) was authorized by Article 14, Section 5 of the North Carolina Constitution. It seeks to ensure that lands and waters acquired and preserved for park, recreational, and scenic areas for the purpose of controlling and limiting the pollution of air and water, controlling excessive noise, and in every other appropriate way preserving as a part of the common heritage of the state, continue to be used for those purposes. The State Nature and Historic Preserve Act provides a strong legal tool for protecting lands from incompatible uses. The addition and removal of lands to and from the State Nature and Historic Preserve require a vote of three-fifths of the members of each house of the General Assembly. All land and water within the park boundaries as of April 4, 1989 are protected by the State Nature and Historic Preserve Dedication Act.

Nature Preserves Act

The Nature Preserves Act (1985, G.S. 113A-164) prescribes methods by which nature preserves may be dedicated for the benefit of present and future citizens of North Carolina. It authorizes a Natural Heritage Program to provide assistance in the selection and nomination for registration or dedication of natural areas.

The state may accept the dedication of outstanding natural areas by gift, grant, or purchase of fee simple title or other interest in land. Lands dedicated are held in trust by the state and are managed and protected according to regulations. They may not be used for any purpose inconsistent with the provision of the Nature Preserves Act or disposed of by the state without a finding by the Governor and Council of State that the other use or disposition is in the best interest of the state.

In January 1995, the Governor and Council of State designated 1150 acres of the park as a Dedicated State Nature Preserve, including the entire reach of the river that was included in the park's boundaries at that time.

North Carolina Environmental Policy Act of 1971

Recognizing the profound influence that human activity has on the natural environment, the General Assembly passed the Environmental Policy Act *"to assure that an environment of high quality will be maintained for the health and well-being of all..."*

The Act declares that:

It shall be the continuing policy of the State of North Carolina to conserve and protect its natural resources and to create and maintain conditions under which man and nature can exist in productive harmony. Further, it shall be the policy of the State to seek, for all its citizens safe, healthful, productive, and aesthetically pleasing surroundings; to attain the widest possible range of beneficial uses of the environment without degradation, risk to health or safety; and to preserve the important historic and cultural elements of our common inheritance. (G.S. 113A-3)

Archaeological Resources Protection Act

The Eno River area is known to have been occupied by American Indian tribes, and the area is also rich with cultural resources associated with European settlement, particularly grist mills constructed along the river in the eighteenth and nineteenth centuries. The ruins of an old mill village, a Civil War era quarry, and evidence of American Indian habitation are found at Occoneechee Mountain. Unknown archaeological resources may also exist, both within the existing park boundaries and in nearby areas. Development of recreational facilities should avoid destruction of these resources.

A permit is required from the Department of Administration, in consultation with the Department of Cultural Resources, to excavate, remove, damage, or alter any archaeological resource on state lands. Archaeological resources are defined as the remains of past human life or activities that are at least 50 years old and are of archaeological interest (G.S. 70-10).

While there are other General Statutes that concern the state parks system and the environment, the above-described statutes, along with Article XIV, Section 5, of the North Carolina Constitution, largely define the purposes of the state parks system and serve to guide the operation of state park system units.

FEDERAL LAWS

Land and Water Conservation Fund Act of 1965

The federal Land and Water Conservation Fund Act (PL 88-578) offers protection and places restrictions on fund-assisted outdoor recreation areas.

By virtue of receiving Land and Water Conservation Fund (LWCF) grant assistance, most of the state parks system, including most of Eno River State Park, is subject to LWCF rules and regulations. Property acquired or developed in whole or in part with LWCF assistance cannot be converted to other than public outdoor recreation use without federal approval. A conversion may take place only if approved by the Secretary of the Interior, and only then if replacement property of equal fair market value and reasonably equivalent usefulness and location is made. Most of Eno River State Park, except for lands acquired since the last of the seven federal grants, is protected by LWCF regulations.

LWCF requirements include: programming, operating and maintaining areas in a manner that encourages public participation; maintaining the property so it appears attractive and inviting to the public; maintaining property, facilities and equipment to provide for public safety; keeping facilities, roads, trails and other improvements in reasonable repair throughout their lifetime to prevent undue deterioration and encourage public use; keeping the park and facilities open for use at reasonable hours and times; and making future development meet LWCF rules and regulations.

LWCF-assisted sites are periodically inspected by state and federal inspectors to ensure compliance with LWCF requirements.

The Americans With Disabilities Act

Title II of the ADA prohibits discrimination against any "*qualified individual with a disability*."

New Construction and Alterations

Buildings that are constructed or altered by, on behalf of, or for the use of a public entity shall be designed, constructed, or altered to be readily accessible to and usable by individuals with disabilities. (Section 35.151 of Title II)

Existing Facilities

Structural changes in existing facilities are required only when there is no other feasible way to make the public entity's program accessible ("Structural changes" include all physical changes to a facility [28 CFR Part 35, Section 35.150, Title II of the ADA Section-by-Section Analysis].)

When alterations affect access to a primary function of a facility, the entity shall also make alterations to the path of travel to the area and bathrooms, public telephones, and drinking fountains serving the altered area.

Programs and Services

...each service, program, or activity conducted by a public entity, when viewed in its entirety, be readily accessible to and usable by individuals with disabilities.
(Title II, Section 35.150)

This includes, but is not limited to, the provision of auxiliary aids and services, including services and devices for effective communication where necessary to afford persons with disabilities an equal opportunity to participate in and enjoy the benefits of a service, program, or activity conducted by a public entity.

Signs

A public entity must ensure that persons with impaired vision and hearing can obtain information regarding the location of accessible services, activities, and facilities. Signs must be provided at all inaccessible entrances to each facility directing users to an accessible entrance or to a location where information can be obtained about accessible facilities. The international symbol for accessibility must be used at each accessible entrance to a facility. (Title II, Section 35.163)

Clean Water Act

Eno River State Park's sensitive wetland areas receive some protection from Section 404 of the federal Clean Water Act. The Act prohibits the discharge of dredge or fill materials into waters, including wetlands, without a permit from the U.S. Army Corps of Engineers. Activities in wetlands for which permits may be required include but are not limited to: placement of fill material; ditching activities; land clearing involving relocation of soil material; land leveling; most road construction; and dam construction (33 USC 1344). The Division will avoid undertaking construction located in wetlands unless there is no practical alternative and all practical measures are taken to minimize harm to the wetland.

VI. NATURAL AND CULTURAL RESOURCE MANAGEMENT

NATURAL RESOURCE MANAGEMENT POLICY

The Division of Parks and Recreation' s approach to natural resource management is directed by the North Carolina Constitution and the State Parks Act, both of which require the prudent management of natural resources. The constitution sets the overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The State Parks Act states that unique archaeological, geological, biological, scenic and recreational resources are a part of the heritage of the people that “...*should be preserved and managed by those people for their use and for the use of their visitors and descendants.*”

The North Carolina state parks system plays an important role in maintaining, rehabilitating and perpetuating the state' s natural heritage. The natural resources of the state parks system include: high quality, rare or representative examples of natural communities; native plants and animals; geological features and land forms; water resources; and the natural processes that affect these resources. The primary objective in natural resource management will be the protection of natural resources for their inherent integrity and for appropriate types of enjoyment while ensuring their availability for future generations.

It is the Division' s policy that natural resources will be managed by allowing natural environments to evolve through natural processes with minimal human influence. Natural resource management will not attempt solely to preserve individual species or processes; rather, it will attempt to maintain all the components and processes of a park' s naturally evolving ecosystems. When intervention is necessary, direct or secondary effects on park resources will be minimized to the greatest extent possible. Intervention of natural processes may occur:

To correct or compensate for the previous human disruption of natural processes;

To protect, restore or enhance rare species and natural communities;

To protect, restore or enhance significant archaeological resources;

To construct, maintain, improve or protect park facilities; and,

To prevent danger to human health or safety around park facilities.

All park facilities will be designed, constructed and maintained to avoid adverse impacts to high quality natural communities, rare plant and animal species, major archaeological sites and other significant natural and cultural resources.

ENO RIVER NATURAL COMMUNITIES

Community descriptions follow the *Classification of the Natural Communities of North Carolina: Third Approximation* (Mike Schafale and Alan Weakley, 1990).

Dry Oak-Hickory Forest

This forest type, which typically occurs on ridge tops, steep south-facing slopes, and other dry upland areas, was once one of the most predominant natural communities in the Piedmont. Much of the historical range has been cleared for agriculture or urban development; those areas that were not cleared were subjected to long-term selective cutting and livestock foraging. Examples of significant size and quality are rare.

An extensive example of this community occurs on the broad ridge tops and upland slopes in the area around Few's Ford. The canopy is closed and is dominated by white oak (*Quercus alba*), southern red oak (*Q. falcata*), scarlet oak (*Q. coccinea*), and post oak (*Q. stellata*). The dominant hickory species are mockernut (*Carya tomentosa*) and pignut (*C. glabra*).

Dry-Mesic Oak-Hickory Forest

This forest type occurs on low and middle slopes, upland flats, and other dry-mesic upland areas. Like the Dry Oak-Hickory Forest, this was once one of the most extensive and well developed community types in the Piedmont prior to widespread clearing for development and agriculture.

Two examples of this community occur in the park. The first is on the middle and upper slopes of the extensively forested uplands south of the river around the Few's Ford area. The canopy is dominated by white oak, northern red oak (*Q. rubra*), black oak (*Q. velutina*), and scarlet oak. The dominant hickory species are mockernut and pignut. The second example occurs south of the river on the upland slopes and ridges in the Cabe Lands section of the park. Canopy species are the same as above, with the addition of yellow poplar (*Liriodendron tulipifera*), black walnut (*Juglans nigra*), shortleaf pine (*Pinus echinata*), and Virginia pine (*P. virginiana*).

Piedmont/Coastal Plain Acidic Cliff

This community type occurs on very steep to vertical slopes that are rocky or dry enough to prevent the formation of a closed tree or shrub canopy. Hard rock is the most typical substrate; however, this community is also associated with softer material that has been undercut and exposed by a stream. The vegetation is usually heterogeneous and scattered; trees and shrubs are limited to crevices or other areas of deeper soil.

Three examples of this community occur in the park. An unusually xeric example occurs on a steep, rocky, south-facing bluff north of the river in the Few's Ford area. The dominant tree and

shrub species are post oak, mountain laurel (*Kalmia latifolia*), and stunted Virginia red cedar (*Juniperus virginiana*). Herbaceous species include woolly lipfern (*Cheilanthes tomentosa*), and goat's rue (*Tephrosia virginiana*). A second example occurs on a rugged, nearly vertical outcrop that runs for approximately 1,000 feet along the east side of the river in the Cabe Lands section. Woody vegetation at this site is very limited and is dominated by dry site species such as Virginia pine, post oak, and blackjack oak (*Q. marilandica*). The best example of this community is the Garrard Slopes in Durham County, located on the south bank about one-half mile west of Guess Road. These cliffs rise approximately 70 feet and are about 700 feet long.

Mesic Mixed Hardwood Forest (Piedmont Subtype)

This community generally develops on low slopes, steep north-facing slopes, and ravines. These forests remain common across the region, and their occurrence on steep sites has spared many of them the extensive disturbance that has occurred in other upland natural communities.

Three examples of this natural community occur in the park. The first is in moist, north-facing ravines along the south side of the river in the Cabe Lands section. This is an old forest, with tree ages in some areas estimated to exceed 150 years. Dominant species include beech (*Fagus grandifolia*), bitternut hickory (*C. cordiformis*), northern red oak, and yellow poplar. The second example occurs on steep north-facing slopes and ravines south of the river in the Pump Station section. This is a younger community than the one at the Cabe Lands and it supports a diverse flora. Dominant canopy species include northern red oak, beech, and red maple (*Acer rubrum*). The average diameter-at-breast-height (dbh) is 10-12". Trees up to 30" dbh are also present. The herb layer is rich and diverse and includes yellow ladyslipper (*Cypripedium pubescens*), and doll's-eyes (*Actaea pachypoda*). The third example occurs in the Few's Ford section along north and east-facing slopes. Vegetation is similar to that found at the Cabe Lands.

Piedmont/Low Mountain Alluvial Forest

This community occurs in river and stream flood plains that are seasonally or intermittently flooded. Flood-borne sediments provide nutrients to these communities, which typically have a closed canopy. Structure and diversity of the subcanopy and herbaceous layers are highly variable and may be affected by the severity of flooding.

An example of this community occurs in the area around the Few's Ford Access. Dominant species include river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), box-elder (*Acer negundo*), and white ash (*Fraxinus americana*).

Rocky Bar and Shore

This community occurs as outcrops and gravel bars in or adjacent to rivers and streams. These sites are typically too rocky or wet to support trees. Frequent disturbance results in vegetation patterns that are highly variable and dependent on flooding and sediment loads.

An example of this community type occurs in the area around the Few's Ford Access. The site features well developed gravel shoals and riffles in the riverbed; since these shoals are frequently reworked by the river, woody vegetation is essentially absent. The dominant plant species is common water-willow (*Justicia americana*). The site also supports mussel beds.

Piedmont/Coastal Plain Heath Bluff

This community occurs on steep, north-facing slopes and bluffs that generally border a flood plain forest or stream channel. Although usually found in areas underlain by hard rock, these communities may also develop on sites with softer material that has been undercut by a stream.

An extensive example of this community type occurs along a series of three steep, rocky bluffs along the south side of the river in the Cabe Lands section of the park. The vegetation at these bluffs is dominated by mountain laurel. Two of the bluffs support Catawba rhododendron (*Rhododendron catawbiense*). The tree canopy is open and is dominated by white oak, chestnut oak (*Q. montana*), beech, Virginia pine, and gum species (*Nyssa* spp.). The western bluff is the state's easternmost location for mountain spleenwort (*Asplenium montanum*).

RARE SPECIES AT ENO RIVER

Plants

Ginseng (*Panax quinquefolius*)

Ginseng is on the North Carolina watch list. This designation means that ginseng is believed to be rare and of conservation concern in the state, but it does not warrant active monitoring at this time. Populations have been previously documented in the vicinity of Cox Mountain at Few's Ford. Park staff, however, believe that the range of ginseng is diminishing since known populations of this plant are no longer extant in the park.

Amphibians

Neuse River Waterdog (*Necturus lewisi*)

This large salamander is a state-listed species of Special Concern. This listing means that the North Carolina Wildlife Resources Commission (WRC) has determined that this species is sufficiently rare to warrant monitoring. A 2000-2001 study indicates that the waterdog is not at imminent risk of disappearing from the Piedmont portion of the Neuse River basin, and that populations in the Eno River appear healthy. The low level of capture success, however, suggests at least an uncommon species. Evidence suggests that this animal is at some level of risk from impacted water quality. Continued monitoring is needed to ensure its future.

Mollusks

Eastern Lampmussel (*Lampsilis radiata*)

The eastern lampmussel is a state-listed species of Special Concern. This listing means that the WRC has determined that this species is sufficiently rare to warrant monitoring. During a survey in 1992, this mussel was found at a number of locations at Few's Ford, Pleasant Green, and the Pump Station.

Green Floater (*Lasmigona subviridis*)

The green floater is a state-listed endangered species, which means the Wildlife Resources Commission has determined that this mussel's continued existence as a viable component of the fauna in North Carolina is in jeopardy. The green floater is also a federal species of concern, which means that although it may be appropriate to list the species as endangered or threatened, the Fish and Wildlife Service does not currently have conclusive data on vulnerability or threats.

Yellow Lampmussel (*Lampsilis coriosa*) and **Atlantic Pigtoe** (*Fusconaia masoni*)

Both of these mussels are state-listed as Threatened by the WRC. This listing means that they are likely to become endangered species within the foreseeable future throughout all or a significant portion of their ranges. They are also federal-listed as Species of Concern, meaning that it may be appropriate to list these species as endangered or threatened, but currently the FWS does not have conclusive data on vulnerability or threats to warrant such a listing. Both species of mussels were sampled in 1995. The Atlantic pigtoe was found at a number of locations at the Pump Station, and the yellow lampmussel was found throughout the park.

Panhandle Pebblesnail (*Somatogyrus virginicus*)

The panhandle pebblesnail is a federal-listed Species of Concern and is designated by the Natural Heritage Program (NHP) as Significantly Rare. The federal listing means that it may be appropriate to list the species as endangered or threatened, but currently the FWS does not have conclusive data on vulnerability and threats to warrant such a listing. Although significantly rare species exist in small numbers, they have not been listed by the WRC as endangered, threatened, or special concern. The NHP monitors the status of significantly rare species. In 1993, this mussel was found at the Pump Station near Guess Road. While working on her thesis in the summer of 1997, a Duke University masters student found the pebble snail in over 30 locations in the park.

Squawfoot (*Strophitus undulatus*) and **Triangle Floater** (*Alasmidonta undulata*)

These rare mussels are state-listed as Threatened species and are, therefore, recognized by the WRC as ones that are likely to become endangered species within the foreseeable future throughout all or a significant portion of their range. Both of these species were sampled in 1992. A number of squawfoot mussels were found at the Pump Station. One triangle floater was found

at Few's Ford.

Notched Rainbow (*Villosa constricta*)

This mussel species is designated as Significantly Rare by the NHP. Significantly rare species exist in small numbers but have not been formally listed by the WRC as endangered, threatened, or special concern. The NHP monitors the status of Significantly Rare species. In 1995, the notched rainbow was found at a number of locations throughout the park.

Fish

Roanoke Bass (*Ambloplites cavifrons*)

The Roanoke bass is designated as Significantly Rare by the NHP. Significantly Rare species exist in small numbers but have not been formally listed by the WRC as endangered, threatened, or special concern. The NHP monitors the status of Significantly Rare species.

Carolina Darter (*Etheostoma collis*)

The Carolina darter is a state-listed species of Special Concern. This designation means that the WRC has determined that this fish is sufficiently rare to warrant monitoring.

Birds

Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk is a state-listed species of Special Concern. This designation means that the Wildlife Resources Commission has determined that this bird is sufficiently rare to warrant monitoring.

Black Vulture (*Coragyps atratus*)

This species has been designated by the Wildlife Resources Commission as a Special Concern species. These birds prefer forested areas for nesting and forests or open areas for foraging.

Insects

Gray Petaltail (*Tachopteryx thoreyi*)

This dragonfly is designated as Significantly Rare by the NHP. Significantly Rare species exist in small numbers but have not been formally listed by the WRC as endangered, threatened, or special concern. The NHP monitors the status of Significantly Rare species.

DEDICATED NATURE PRESERVE

In January 1995, 1,150 acres of Eno River State Park, including the entire reach of the river that is included in the park's boundaries, were approved by the Governor and Council of State for designation as a Dedicated Nature Preserve. This designation supersedes any areas previously designated as Registered Natural Heritage Areas and provides more stringent rules for use and protection of the dedicated area.

The dedicated lands along the river include high quality examples of both rare and common natural community types. The rare community types are most notable for their small size and scarcity across the landscape; the larger, more common community types are most notable for the presence of mature, well developed vegetation patterns that resemble the historical landscape. These large tracts also provide habitat for animals that require large home ranges. The aquatic habitat is most notable for its role in supporting the park's numerous rare aquatic species, many of which serve as indicators of water quality.

Potential Additions to the Dedicated Nature Preserve

Additional lands that are acquired will need site inspections and inventories in order to determine their eligibility for inclusion in the Dedicated Nature Preserve.

NATURAL AND CULTURAL RESOURCE MANAGEMENT ISSUES

Natural Resource Inventories

Although the park has been the subject of a number of scientific research projects, including an aquatic survey in 1996, a comprehensive, updated natural heritage survey is needed. These inventories would provide important baseline data for monitoring and managing ecologically sensitive natural resources and would also help identify additional high quality areas for designation as Dedicated Nature Preserves. These data would also allow for expanded interpretation and education programs. Emphasis should be placed on developing and maintaining an updated database for the park's rare species. Efforts should also be made to determine the presence and status of rare species known only from isolated or historical records. Particular attention should be placed on the status of rare aquatic species, the presence of which frequently serve as indicators of water quality.

Cultural Resource Inventories

The area in and around the state park is known to have been long inhabited by the Eno, Occaneechee, and Shakori Indian tribes, who apparently shared the river valley with little animosity. These tribes dispersed soon after the arrival of European settlers around 1750, and little work has been done to document the location and extent of cultural resources associated with American Indian habitation and use of the river valley.

The same is generally true of the area's cultural resources associated with European settlement. Although much is known of the numerous grist mills that were built along the river in the eighteenth and nineteenth centuries, a comprehensive study of these sites has never occurred. The only site that has received any preliminary investigation is the Few's Ford community, which the North Carolina Department of Cultural Resources added to the study list of potential nominations to the National Register of Historic Places in April 1994.

In order to address issues regarding environmental compliance for capital improvements, the Resource Management Program has recommended that a system wide archaeological survey be conducted to determine what, if any, mitigation will be required for sites that support significant cultural resources. Funding has been approved by the Parks and Recreation Trust Fund, and surveys for all projects in the park's master plan are being coordinated with the Office of State Archaeology. In addition to these surveys, the division needs to develop a comprehensive database regarding the role and extent of both American Indian and European inhabitants in the Eno River Valley. Such studies could be of great benefit for the park's interpretation and education programs.

Water Quantity

Concerns over low flows in the Eno River prompted the Town of Hillsborough, the Orange-Alamance Water System, Inc., Orange County, and Piedmont Minerals, Inc. to develop a voluntary capacity use agreement in February 1989. This agreement restricts the amount of water each user can withdraw based on the actual flows measured in the river. Water users who withdraw more than 100,000 gallons per day are subject to the management controls stated in the agreement. The area covered by this agreement covers 150 square miles and encompasses the Eno River watershed upstream from the confluence of the Eno River with the Little River. As long as this agreement continues to function satisfactorily, it will continue to be administered on a voluntary basis.

Water Quality

The North Carolina Division of Water Quality regularly monitors the water chemistry and biology of the Eno River. Ambient water chemistry is sampled monthly at two sites and aquatic insects are sampled every five years at an additional two sites within the park. Considering the urban character of the areas surrounding the Eno River, the park lands provide an excellent buffer for the maintenance of high water quality in this river. Rapid growth, however, will continue to put pressure on the watershed, underscoring the need for long-term monitoring of water quality.

Southern Pine Beetle Management

Sections of the park have been affected by outbreaks of the southern pine beetle (*Dendroctonus frontalis*). Southern pine beetles (SPB) are a naturally occurring component of southeastern forests and are, therefore, always present at some level. However, their effects are rarely uniform and tend to be more adverse when combined with the physiological distress that trees experience when exposed to prolonged hot, dry weather, disease, or other stress causing agents.

Although the SPB is a significant and widespread native forest pest whose effects have been documented since the 1750s, an effective method to control its periodic outbreaks has not yet been developed. The division's policy on SPB outbreaks is to remove affected trees whenever they present a threat to visitor safety or to a neighboring landowner. In response to such outbreaks, control efforts at Eno River have focused primarily on the removal of affected trees to create buffers around active beetle sites. Small, isolated outbreaks that affect few trees or that are sufficiently removed from higher risk areas are generally left alone, since the impacts of getting to such sites generally outweigh the benefits gained from treating the spot. Pheromone treatments were employed in 1994 and 1995 by the U.S. Department of Agriculture as part of a scientific research project on SPB control. The results of these treatments have been mixed.

Durham Northwest and Northeast Loop (Eno Drive)

The division has reviewed and provided comments to the NC Department of Transportation on their Draft Environmental Impact Statement (DEIS) for the Durham Northwest and Northeast Loop. The division's major objection focuses on the proximity to the park of the segment from Roxboro Road westward to Interstate 85. The division believes that potential impacts, both short and long term, to the river and the park were not adequately addressed by the DEIS.

Potential noise impacts on the state park from the construction of this road were not addressed in the DEIS. The proposed road would be very close to the park or would adjoin the park boundary in several locations. Hiking, bird watching, environmental education, and other park activities would be adversely affected by noise generated by this project. The construction of a major road along the park boundary could also affect the wildlife living along the river corridor. Long term impacts could include wildlife killed by traffic, loss or alterations of habitat, and alterations in movement patterns. This type of development may also disrupt the breeding and foraging behavior of wary species.

Although the road would not cross the river, the location of the road so close to the river and the crossing of several major tributaries are likely to result in the degradation of the water quality of the river. The Eno River supports numerous rare aquatic species whose presence is largely a consequence of good water quality and relatively undisturbed habitat. It is reasonable to expect that the construction of this road will cause a significant amount of sedimentation, which could adversely affect the rare mussels and other aquatic species as well as degrade the aesthetic appeal of the river. Secondary impacts associated with this road project could include more urban development along the construction corridor.

As of December 2002, the Northwest Loop (Eno Drive west Roxboro Road) has been eliminated from the Metropolitan Planning Organization Long Range Transportation Plan. Should the Northwest Loop be re-inserted into transportation planning it will loom in the forefront of management concerns at Eno River State Park.

Invasive Exotic Plant Species

In 1999, Invasive Plant Control, Inc. was contracted by the Division of Parks and Recreation to conduct a park-by-park inventory of invasive exotic plant species. These inventories were

conducted with an emphasis on roads, trails, waterways, and high use visitor areas and were intended to serve as the primary source for information regarding species identification, location, degree of infestation, and difficulty of control. Information from these inventories is to be used in conjunction with the division's *Exotic Plant Guidelines*, which provide step-by-step protocols for the development of control plans. Copies of this inventory and guideline are on file with the park and the Resource Management Program.

The inventory at ENRI was divided into four sections: Few's Ford; Pleasant Green/Cabe Lands; Cole Mill/Pump Station; and OCMO. In all, 14 invasive exotic plant species were identified; twelve of these species occurred on ENRI sites, and nine occurred at OCMO. The following species were identified:

Species	ENRI	OCMO
Lespedeza (Lespedeza cuneata)	X	X
Japanese honeysuckle (Lonicera japonica)	X	X
Japanese grass (Microstegium viminium)	X	X
Periwinkle (Vinca minor)	X	
Multiflora Rose (Rosa multiflora)	X	X
Chinese privet (Ligustrum sinense)	X	X
Tree of Heaven (Ailanthus altissima)	X	X
Autumn olive (Elaeagnus umbellata)	X	
Chinese wisteria (Wisteria sinensis)	X	
Mimosa (Albizia julibrissin)	X	
English ivy (Hedera helix)	X	X
Kudzu (Pueraria lobata)	X	
Large periwinkle (Vinca major)		X
Princess tree (Paulownia tomentosa)		X

It is recommended that park staff continue to search for exotic species and to update the 1999 inventory, as it is likely that additional exotic species occur at both ENRI and OCMO that were not previously documented. It is also recommended that park staff apply the protocols contained in the division's *Exotic Species Guidelines* to identify and prioritize the most critical species for control and/or eradication. Of particular concern are well-established populations of aggressive species, including tree of heaven, multiflora rose, Japanese honeysuckle, and Chinese privet. All of these are common at old home sites, which are numerous throughout the park. The control of these species will likely be a long term project, as most of the non-native species that have been

found are aggressive and are well established. Control plans should, whenever possible, make the best possible use of volunteers and should include the use of appropriate herbicides that are applied according to the manufacturer's suggestions and under the supervision of a state-licensed applicator. Park staff can be licensed and can find information on this process by contacting the NC State Department of Agriculture.

Resource Management Plan

A comprehensive, park-specific resource management plan addressing these and future issues needs to be developed for Eno River State Park and Occoneechee Mountain. This plan should include detailed actions, the implementation of which will prevent or correct threats or damage to the natural resources of the park. The addition of a district resource management specialist would facilitate the development and implementation of this plan.

OCCONEECHEE MOUNTAIN NATURAL COMMUNITIES

The community descriptions follow the *Classification of the Natural Communities of North Carolina: Third Approximation* (Mike Schafale and Alan Weakley, 1990).

Dry Oak–Hickory Forest

Mature Dry Oak–Hickory Forests are found on the mid-slopes of Occoneechee Mountain. A typical assemblage of oaks, including white oak (*Quercus alba*), post oak (*Q. stellata*), and southern red oak (*Q. falcata*), along with a variety of hickory species (*Carya spp.*) forms the overstory. The understory is dominated by sourwood (*Oxydendrum arboreum*) and black gum (*Nyssa sylvatica*).

Piedmont Acidic Cliff

An example of this community occurs at the site known as Panther's Den, which is characterized by north-facing vertical cliffs and a steep, rocky ravine. Catawba rhododendron (*Rhododendron catawbiense*) and chestnut oak (*Q. montana*) dominate this site. The site is significant because it contains several montane disjuncts at their eastern limit, including sarsaparilla (*Aralia nudicaulis*) and mountain spleenwort (*Asplenium montanum*).

Piedmont Monadnock Forest

One of the largest and most mature examples of a Piedmont Monadnock Forest in the eastern piedmont occurs at the summit of Occoneechee Mountain. Dominated by chestnut oak and scarlet oak (*Q. coccinea*), this community occurs on rocky, well-drained, and generally very acidic soils. The understory contains an abundance of sourwood and red maple (*Acer rubrum*). Blueberries (*Vaccinium spp.*) and huckleberry (*Gaylussacia baccata*) dominate the sparse shrub layer.

Pine–Oak Heath

The Pine–Oak Heath at Occoneechee Mountain is the easternmost occurrence of this community in the state. It is located on the northern edge of the ridge and is dominated by Virginia pine (*Pinus virginiana*) and a dense shrub layer containing blueberries, huckleberry, and mountain laurel (*Kalmia latifolia*). Bracken fern (*Pteridium aquilinum*) is found in abundance.

OCCONEECHEE MOUNTAIN RARE SPECIES

Plants

Plants Brown Elfin (*Incisalia augustinus*)

This butterfly has been placed on the Natural Heritage Program's (NHP) Watch List. Such species are believed to be of conservation value because of scarcity, declining populations, threats to populations, or their scarcity cannot be determined due to inadequate information. This species occurs in heath vegetation at the summit.

Large Witch-alder (*Fothergilla major*)

This species has been designated by the Plant Conservation Program (PCP) as a Candidate Species. Such species are considered to be quite rare. If present land use trends continue, the species may be listed as either Threatened or Endangered on the state level. At least two populations have been documented growing among heath-dominated communities on dry mid and upper slopes at Occoneechee Mountain.

Sweet Pinesap (*Monotropis odorata*)

This species has been designated by the PCP as a Candidate Species. Information on the species' presence at Occoneechee Mountain is very sketchy and needs to be confirmed.

Purple Fringeless Orchid (*Platanthera peramoena*)

This species has been designated by the PCP as a Candidate Species. Information on the species' presence at Occoneechee Mountain is very sketchy and needs to be confirmed. The most recent record dates from 1977.

Bradley's Spleenwort (*Asplenium bradleyi*)

This species has been listed by the NHP as a Candidate Species. NHP records indicate that Occoneechee Mountain supports what may be the state's largest population of this species. It occurs on the lower part of the mountain's north-facing slopes on rocks in a chestnut oak forest.

Insects

Gray Petaltail (*Tachopteryx thoreyi*)

This dragonfly is designated as Significantly Rare by the NHP. Significantly Rare species exist in small numbers but have not been formally listed by the WRC as endangered, threatened, or special concern. The NHP monitors the status of Significantly Rare species.

POTENTIAL DEDICATED NATURE PRESERVE

The inclusion of Occoneechee Mountain in the state parks system as a State Natural Area is based on Natural Heritage Program inventory data. Much of the mountain is included in the significant Natural Heritage Area identified for the site. Additional inventory work is needed to determine the boundaries of a Dedicated Nature Preserve under the Nature Preserves Act for Occoneechee Mountain State Natural Area.

OCCONEECHEE MOUNTAIN NATURAL AND CULTURAL RESOURCE MANAGEMENT ISSUES

Cultural Resources

Occoneechee Mountain has a diverse array of cultural resources. The ruins of an old mill village can be found on the northern slope of the mountain. The western slope has been scarred by an old quarry site. There is also evidence of American Indian habitation in the area. The development of trails and facilities must occur with these cultural resources in mind.

In order to address issues regarding environmental compliance for capital improvements, the Resource Management Program has recommended that a system wide archaeological survey be conducted to determine what, if any, mitigation will be required for sites that support significant cultural resources. Funding has been approved by the Parks and Recreation Trust Fund, and surveys for all projects in the park's master plan are being coordinated with the Office of State Archaeology. In addition to these surveys, the division needs to develop a comprehensive database regarding the role and extent of both American Indian and European inhabitants at Occoneechee Mountain. Such studies could be of great benefit to the park's interpretation and education (I&E) programs.

Natural Resources Inventories

Comprehensive natural heritage surveys are needed. These inventories would provide baseline data for monitoring and managing ecologically sensitive resources and would also help identify additional high quality areas for designation as Registered Natural Heritage Areas. These data would also allow for expanded interpretation and education programs. Emphasis should be placed on developing and maintaining an updated database for the park's rare species. Efforts

should also be made to determine the presence and status of rare species known only from isolated or historical records. Vegetation monitoring plots should be established in the park's various natural communities in order to track changes in community structure and status.

Invasive Exotic Plant Species

See page VI - 9 for summary of this issue.

Carrying Capacity of the Site

The area has had uncontrolled public use, and the natural resources are showing signs of wear. This site supports ecologically sensitive natural resources of statewide significance; some locations can only handle low levels of use. Research is needed to determine the level of use that the resources of the area can withstand.

Development of Trails and Facilities

Since much of the mountain supports rare plant and animal species and high quality natural communities, the development of trails and facilities will require coordination with the Resource Management Program. All capital improvements must be planned and constructed with resource protection in mind.

VII. PHYSICAL PLANT INVENTORY

FACILITY INVENTORY AND INSPECTION PROGRAM

Buildings and other structures in state parks are necessary to provide services to park visitors. These structures are essential for protecting public safety, health, and welfare while providing opportunities for outdoor recreation. They include infrastructure, such as roads, parking lots, trails, and systems for potable water, electrical distribution, and sewage treatment. They also include operational and recreational facilities, such as campgrounds, picnic areas, concession building, boardwalks, park offices, residences, pumphouses, warehouses, barracks, maintenance shops, visitor centers, etc. These facilities must be properly maintained to continually provide visitors a safe and high quality experience.

The Facility Inventory and Inspection Program (FIIP) is a computer-based system used to track the condition, maintenance needs, and repair costs of every building in the state parks system. A principal objective of FIIP is to identify deficiencies that may create a risk to health, or have the potential for fire or risk of injury or death. Other objectives are to identify accessibility deficiencies and other significant maintenance-related deficiencies.

During a field evaluation of each facility, deficiencies are given priority ratings of critical, serious, or minor. The deficiencies are classified in nine basic categories: site (the grounds and walkways surrounding the building); exterior envelope; interior envelope; fire/life safety; handicapped accessibility; public health; heating/ventilation/air conditioning (HVAC); plumbing; and electrical.

The field evaluation begins with an inventory of all structures in the park. The results of the inventory are presented using the building name and state property numbers as identification (Table VII-1 and Figure VII-1). Next, the types of repairs and repair costs are listed for each building. Finally, the cost summary for the park is given using the nine basic categories of repairs (e.g. exterior envelope) and the three levels of deficiencies (critical, serious, and minor).

Table VII-1. Eno River State Park Building Inventory

<u>NAME</u>	<u>CODE</u>	<u>BUILDING</u>
	<u>IN USE</u>	
025001	Piper-Cox House	Y
025002	Tool Shed	N
025003	Tractor Shed	Y
025004	Lawn Mower Shed	Y
025005	Wilderness Shelter Log Cabin	Y
025006	Shop	Y
025007	Pit Toilet	Y
025008	Park Office	Y
025009	Superintendent's Residence	Y
025010	Pumphouse	Y
025011	YACC Shack	Y
025012	Pit Toilet	Y
025013	Pit Toilet	Y
025017	Well Shelter	Y
025018	Ranger Residence	Y
025019	Vehicle Repair Shed	Y
025020	Ranger Residence	N
025021	Shed at Open Air Rd Residence	N
025022	Storage Building, Open Air Road	Y
025023	Wellhouse, Open Air Road	Y
025024	Picnic Shelter, Cole Mill Road	Y
025025	Vault Toilet near Shelter	Y
025026	Vault Toilet near Trail Head	Y
025027	Picnic Shelter A	Y
025028	Picnic Shelter B	Y
025029	Picnic Shelter C	Y
025031	Pit Privy B	Y
025033	Pit Privy D	Y
025034	Wellhouse, Open Air Camp	Y
025035	Open Air Camp Residence	Y
025036	Storage Shelter	Y
025037	Well Shelter	Y
025038	Vehicle Storage Shed	Y
025039	Fuel Shelter	N
025040	Occoneechee Mtn. Residence	Y
025041	Picnic Shelter at Cole Mill Access	Y
025042	Picnic Shelter at Few's Access	Y
025043	Toilet Building at Few's Access	Y
025044	Cabelands Ranger Residence	Y
025045	Cabelands Superintendent Residence	Y
025046	Cabelands Garage	Y
025047	Cabelands Seasonal Employee Residence	Y

ENO RIVER STATE PARK STATUS OF FACILITIES

Buildings at Eno River are in good condition. Many buildings require no work at all, and only the Piper-Cox House requires work totaling over \$10,000. Renovation of the Piper-Cox house (001) is not addressed in this report since an architecture firm has been contracted to design and oversee this work which is nearing completion. Buildings requiring no repairs are not listed below. Repair needs listed include work needed to meet accessibility standards.

BLDG #	BUILDING NAME / WORK NEEDED	DEMOLITION COST	REPAIR COST
025-002	Tool Shed		337
	Historical evaluation		337
025-005	Wilderness Shelter Log Cabin		\$5,061
	Replace deck and porch		4,050
	Replace log poles		1,011
025-006	Shop		1,275
	Remove underground tank, remediate soil, backfill		1,215
	Replace damaged acoustical tile		60
025-007	Pit Toilet		75
	Replace shingles		75
025-008	Park Office		3,294
	Rework parking to meet accessibility standards		825
	Install wood wedges at doors for accessibility		84
	Remove and replace concrete path for accessibility		675
	Remount paper towel dispensers, lower mirrors,		915
	Replace urinal		
	Install accessible water fountain		795
025-010	Pumphouse		601
	Replace door		293
	Insulate water pipes		308
025-011	YACC Shack	1,350	
	Demolish		
025-018	Ranger Residence		75
	Electrical outlet repair/install GFCI		75
025-023	Wellhouse, Open Air Road		105

BLDG #	BUILDING NAME / WORK NEEDED	DEMOLITION COST	REPAIR COST
	Add heat to building		105
025-024	Picnic Shelter, Cole Mill Road		248
	Replace H/A sign and post and mark access aisle		120
	Add handrail to path near shelter		128
025-025	Vault Toilet near Shelter		255
	Lower urinal, add grab bars		255
025-028	Picnic Shelter B		570
	Replace damaged doors		570
025-029	Picnic Shelter C		690
	Paint Deck		600
	Regrade on North side of building		90
025-031	Pit Privy B		128
	Repaint siding		128
025-034	Wellhouse, Open Air Camp		1,051
	Add radiant wall heat or heat lamp		105
	Repair copper piping		488
	Replace damaged roof decking		128
	Replace damaged rafters		135
	Replace roofing		195
025-035	Open Air Camp Residence		3,932
	Remove above ground tank		750
	Remove tree by house		188
	Replace crawl space door		75
	Replace kitchen, bath outlets with GFCI		180
	Add gutters, down spouts and splash blocks		938
	Replace acoustical tile		38
	Install fiberglass batt insulation under floor		1,508
	Add gravel to driveway		255
025-040	Oconeechee Mountain Residence		32,790

BLDG #	BUILDING NAME / WORK NEEDED	DEMOLITION COST	REPAIR COST
	Replace all windows with insulated windows		6,675
	Rewire entire house to current standards		6,000
	Replace panel box		1,800
	Replace dishwasher and wire		750
	Replace range		1,020
	Add siding to porch addition and paint		780
	Remove shingles, replace deteriorated decking and re-shingle		405
	Scrape and repaint roof soffit		720
	Repair heating/cooling unit wiring		120
	Replace/repair broken screens		420
	Install range hood in kitchen		525
	Remove bricks, re-grade walkway, replace brick		675
	Remove and replace carpet and asphalt tile		3,375
	Repair wallboard and repaint interior		705
	Clean and repaint ceilings		495
	Replace water and waste plumbing		3,450
	Replace toilet, lavatory and tub/shower		4,500
	Grade driveway and add gravel		375
	TOTAL	\$ 1,350	\$ 63,492

**FACILITY REPAIR NEEDS COST SUMMARY
FOR ENO RIVER STATE PARK**

DEFICIENCY CATEGORY	PRIORITY 1 (CRITICAL)	PRIORITY 2 (SERIOUS)	PRIORITY 3 (MINOR)	CATEGORY SUBTOTAL
Site	1,350	900	3,195	5,445
Exterior Envelope	0	19,945	1,903	21,848
Interior Envelope	0	6,083	98	6,181
Fire/Life Safety	0	0	0	0
Handicapped Access	0	3,797	0	3,797
Public Health	0	0	0	0
HVAC	0	5,685	0	5,685
Plumbing/Utility	1,965	8,438	308	10,711
Electrical	6,000	3,825	0	9,825
TOTALS:	9,315	48,673	5,504	63,492

Deficiencies that are a fire threat or threat to life, safety, or the health of an individual are considered to be "critical." A "serious" deficiency is one that is not considered a fire threat or threat to life or safety, but which could cause further damage to the structure if left uncorrected. This category usually includes building code violations. "Minor" deficiencies are those requiring general maintenance and repair.

Facility repair needs for Eno River and Occoneechee Mountain are current as of the last facility inspection, December of 1998.

ROAD INVENTORY AND INSPECTION

Background

The Institute for Transportation Research and Education (ITRE) study in March 1990 (subsequently revised by Alan Jeffreys in March of 1997) inventoried the following roads and parking lots: 1.1 miles of paved road, .54 miles of unpaved road, 3,002 square yards of paved parking lots and 1,368 square yards of unpaved parking lots.

Fews Ford Access Area (Main Park)

Description: Roads consist of the entrance road to the day-use picnic area, Piper-Cox access road, office road, maintenance and horse trailer roads. The roadway system has .82 miles of paved road, .48 miles of unpaved roads, 3,363 square yards of paved parking lot and 875 square yards of unpaved parking lots. The entrance and office road is 20 feet wide with 4-foot shoulders. Piper-Cox Road is 18 feet wide with 3-foot shoulders. The paved roads have an 8-inch stone base with 1-1/2 inches of I-2 asphalt.

Current Conditions: The main entrance road, office road and Piper-Cox Road were expanded and paved in 2000 and are in excellent shape. The Piper-Cox House parking areas were recently paved.

Repair Needs: The office parking lot and day-use picnic area parking lot need striping. The horse trailer road and maintenance road need light grading and additional stone.

Repair Cost: Approximately \$1,000; funds to come from annual NCDOT road funds.

Cole Mill Access Area

Description: The road consists of the entrance road at the end of Old Cole Mill Road (SR 1449) that serves the day-use picnic area. The roadway system has .28 miles of paved roads and 954 square yards of paved parking lots. The two parking lots have a total of 41 spaces, including three handicap spaces. The road is 17 feet wide with four-foot shoulders. The road has a stone base of unknown depth with two inches of I-2 asphalt. The new parking lot that serves the picnic shelter has an 8-inch stone base with 1-1/2 inches of I-2 asphalt.

Current Conditions: The entrance road was resurfaced in 2000 and is now in good condition. No repairs are needed.

Pleasant Green Access Area

Description: The road consists of a short entrance road off of Pleasant Green Road that serves as a main canoe takeout point down stream from Fews Ford Access. The roadway system has .06 miles of unpaved road and a 450 square yard gravel parking lot. The road is 16 feet wide with 2-foot shoulders. The road and parking lot has a stone base of unknown depth.

Current Conditions: This area is currently leased by Duke Power to the Division of Parks and

Recreation. The road and parking lot are in poor shape. Road maintenance funds will come from NCDOT, which currently maintains this area.

Repair Needs: The existing road and parking lot need to be widened and paved. Major grading and landscaping are needed.

Repair Cost: Until ownership of this area is given to the Division of Parks and Recreation, no large capital development should take place. The area is leased until 2010.

Cabe Lands Access Area

Description: A 15-car gravel parking lot provides river access between Fews Ford and Pleasant Green.

Current Condition: The lot is in good condition; no repairs are needed.

SEWER SYSTEM

Fews Ford Access Area

Description:

1. Office area sewer: 1,200 gallon septic tank with three 120-foot drainfield lines;
2. Superintendent's residence: 1,000 gallon septic tank with three 116-foot drainfield lines;
3. Maintenance sewer system: 1,000 gallon septic tank with an unknown number of lines;
4. Primitive group camp privy;
5. Backpack camp privy.
6. Picnic area: 4,000 gallon septic tank with a 3,000 gallon pump tank and twenty 100 ft. lines.

Current Conditions:

1. Installed in 1982: good shape;
2. Installed in 1982: good shape;
3. Age unknown: fair shape;
4. Installed prior to 1978; fair/good shape;
5. Installed 1979; fair/good shape.
6. Installed in 2001; excellent condition. Maintenance is contracted.

Repair Needs:

1. Pump out septic tank;
2. Pump out septic tank;
3. Pump out septic tank and install riser;
4. Replace with Romtec or composting unit;
5. No access; leave as is.
6. None needed.

Repair Cost:

1. \$150;
2. \$150;
3. \$500;
4. \$25,000;
5. None.
6. None.

Cole Mill Access Area

Description: Picnic area vault toilets; 2 Romtec toilets with a 750-gallon capacity.

Current Conditions: Installed in 1996: excellent condition. No repair needs.

Guess Road Ranger Residence

Description: 500 gallon fiberglass pump tank with manhole, riser and cover.

Current Conditions: Installed in 1992 and tied into Durham sewer system; good condition. No repair needs.

Ranger Residence on Open Air Camp Road

Description: Gravity outfall into city sewer.

Current Conditions: Tied into the city sewer system in 1995; good condition. No repair needs.

Ranger Residence on Sterling Road

Description: Gravity outfall into city sewer.

Current Conditions: Good; no repair needs.

Old Girl Scout Camp on Open Air Camp Road

Description: Consists of 2 pit privies.

Current Conditions: All privies are in poor shape; age is unknown.

Repair Needs: Replace with two Romtec units.

Repair Cost: \$50,000

WATER SYSTEM

Fews Ford Access Area

Description: The park is supplied by two water wells with a PVC piping distribution system of various sized piping. Well #1 is 125 feet deep and is 6-5/8 inches in diameter. It produces 40 gallons per minute and was drilled in 1981. The water is high in iron and turbidity. A commercial water softener was installed in 1991. The PVC piping distribution system consists of approximately 2,160 linear feet of 2-1/2 inch PVC, 260 linear feet of 1-1/2 inch PVC and 420 linear feet of 1 inch PVC. The system is also chlorinated. Various sizes of valves are located on the system. The well pump is a submersible pump of unknown size. Well #1 was taken off line when well #2 at the maintenance area was put into service in 2001. Well #2 is 430 ft. deep and produces 32 gallons-per-minute. The water is of good quality and sufficient to supply the Fews Ford Access Area. Two 500 gallon storage tanks provide pressure for the system.

Current Conditions: Well #2 is in good condition and supplies the area. Well #1 serves as a back up. No repairs are needed

Cole Mill Access

Description: This area is served by a 2-inch PVC piping distribution system that ties on to the City of Durham waterline on Cole Mill Road. There are approximately 1,550 linear feet of 2-inch main line with approximately 50 linear feet of 1-inch PVC piping.

Current Conditions: The waterline was installed in 1991 and is in good condition.

Repair Needs: None.

Repair Cost: None.

Guess Road Residence

Description: The residence is tied into Durham City water with 200 linear feet of 1-inch PVC waterline. The house also has a back-up well to water the garden and lawn area. The well has a jet pump of unknown age. The well depth is unknown.

Current Conditions: The water tie in to the city was done in 1992. The distribution line is in good condition.

Repair Needs: When the existing pump and tank fails, the well needs to be abandoned.

Repair Cost: \$1,000.

Ranger Residence at Open Air Camp Road

Description: The residence is served by a well of unknown depth and capacity. The well has a submersible pump of unknown size. A chlorinator and water pressure tank is included with the system. A PVC piping distribution supplies the house. This line is approximately 200 feet away.

Current Conditions: The park acquired the house in 1994 and has problems with the water quality. Lead and bacteria have been found in the water. The system has been replaced with new piping and a chlorinator and is in fair shape.

Repair Needs: Tie on to the city water line.

Repair Cost: Tie on cost is unknown.

Old Girl Scout Camp at Open Air Camp Road

Description: This area consists of a well and related polyethylene piping distribution system. The well is 6-5/8 inches in diameter; depth is unknown. The well has a submersible pump and a pump storage tank with related controls. There are approximately 500 linear feet of distribution system.

Current Conditions: The age of the system is unknown, but the whole system needs replacing if the area is to be used.

Repair Needs: Abandon the existing system and tie in to the city water system.

Repair Cost: Unknown until a variance can be obtained from the city on the road frontage requirement.

Ranger Residence at Sterling Road

Description: The ranger residence is served by a well of unknown depth and capacity.

Current Conditions: Poor

Repair Needs: The residence should tie on to city water.

Repair Costs: Unknown at this time.

ELECTRICAL SYSTEM

Fews Ford Access Area (Main Park)

Description: This area is served by a primary underground power cable distribution system. The system has 1,840 linear feet of primary underground cable with 520 linear feet of secondary underground cable with 3 pad mounted transformers. The power is supplied by Piedmont Electric Company of Hillsborough, NC.

Current Conditions: The power distribution system was installed in 1982 and is owned by the power company. The system is in good shape.

Repair Needs: None.

Repair Cost: None.

Cole Mill Access Area

Description: There is no electric power at this site.

Guess Road Residence

Description: Overhead power line with meter.

Current Conditions: The power is supplied by Duke Power Company located in Durham.

Repair Needs: Install power underground and change service riser.

Repair Cost: Lump sum electrical upgrade: \$1,000.

Old Girl Scout Camp on Open Air Camp Road

Description: An existing underground secondary electric cable supplies power to the well house and old picnic shelter.

Current Conditions: Duke Power Company, located in Durham, currently serves this area with underground power. It is unknown when this system was installed. The system is in poor condition.

Repair Needs: Power service needs to be inspected by the power company before restoring power to the area.

Repair Cost: Unknown.

Ranger Residence at Open Air Camp Road

Ranger Residence at Sterling Road

Description: Service consists of an overhead power line with a service riser.

Current Conditions: Residence is supplied power overhead by Duke Power Company. The power should remain overhead since other homes in the area are supplied overhead. No repairs are needed.

TELEPHONE SYSTEM

Fews Ford Access Area (Main Park)

Description: The phone system has five phones within the office and one in the maintenance area. There is one pay phone located outside the office underneath the covered porch. There are four dedicated phone lines to the park office (two outside lines, one MRTI, and one fax line). All residences have their own individual lines.

Current Conditions: The phone service is supplied by Verizon. No repairs are needed.

MAJOR CAPITAL IMPROVEMENT PROJECT PRIORITIES

The Eno River State Park Master Plan describes the long-range land acquisition and development plans for the park. The proposed development is organized into capital improvement projects. These projects were evaluated and ranked, thus creating a priority list of capital improvement projects for Eno River. The projects were combined with projects evaluated and ranked for other state park units, resulting in a priority list of capital improvement projects for the whole state parks system.

Capital improvement project rankings are based upon objectives such as promoting public health, protecting natural resources, enhancing environmental education, increasing public accessibility, and improving the park's appearance.

Part of the general management plan process included reviewing and updating the Project Priority List, a list of capital improvement projects originally compiled several years earlier using the 1979 master plan. The general management plan evaluation team considered factors such as changes in environmental regulations, the condition of existing facilities, natural heritage values, changes in recreation demand, visitor safety considerations, legislative and lease requirements, new development adjacent to the park, operational needs, and current recreation demand. Completed projects were dropped from the list and new projects were added. Changes to project scopes for various projects were also deemed necessary. The revised Project Priority List follows, along with a description of the various capital improvement projects.

Eno River Project Priority List

Rank	Description	Project Score	Total Costs
1	New maintenance building and warehouse renovation	675	\$ 707,468
2	Horse trail system improvements	659	375,169
3	Pumpstation, Cabe, Pleasant Green Access Development	649	427,147
4	Upgrade of pit privies to vault toilets (4)	625	113,682
5	Exhibits for Piper-Cox House	607	335,182
6	Lawrence Road access (land dependent)	581	131,092
7	Open air camp improvements (land dependent)	569	574,468
8	Bobbit's Hole camping and groupcamp	529	240,171
9	Office additions	522	344,016
	Total	—	3,248,395

1. New Maintenance Building/Warehouse Renovation (\$707,468) – This project will provide the basic maintenance facilities to support park operations. An old residence will be renovated to serve as a warehouse and a standard maintenance building will be constructed. The project also includes construction of a flammable storage building, vehicle wash pad and storage building, paved parking and a 10-foot-high security fence.
2. Horse Trail System Improvements (Land Dependent) (\$375,169) – This project would develop approximately 12 miles of horse trail and includes access road paving, improving a creek crossing, improving two river crossings, trailer parking, one foot bridge on ridge trails and signage. A small amount of land acquisition is needed to connect the trails.
3. Pump Station, Cabe, Pleasant Green Access Development (\$427,147) – The 1991 development of a city park nearby has lessened the need for the state to provide restrooms and picnic sites at the pump station, and so these projects elements were deleted from this project. The city park's restrooms are located approximately 800 feet from the pump station parking lot. A two-seat vault toilet facility has been added to the original project scope. The project includes 200 linear feet of access road, bus and car parking, a gate, 7,500 linear feet of trail, and interpretive displays at the trailhead.

Park staff have continued to make improvements, thus lowering capital improvement needs at access areas along the river. Development needed at Cabe Lands and Pleasant Green accesses was combined with the pumpstation project rather than remain a separate project. At Cabe Land and Pleasant Green, a 1-seat Romtec toilet will be added at both locations to serve visitors and address public health needs. A canoe launch, gate, paved parking and signage will be constructed at Pleasant Green. The project name was changed to reflect project scope changes.

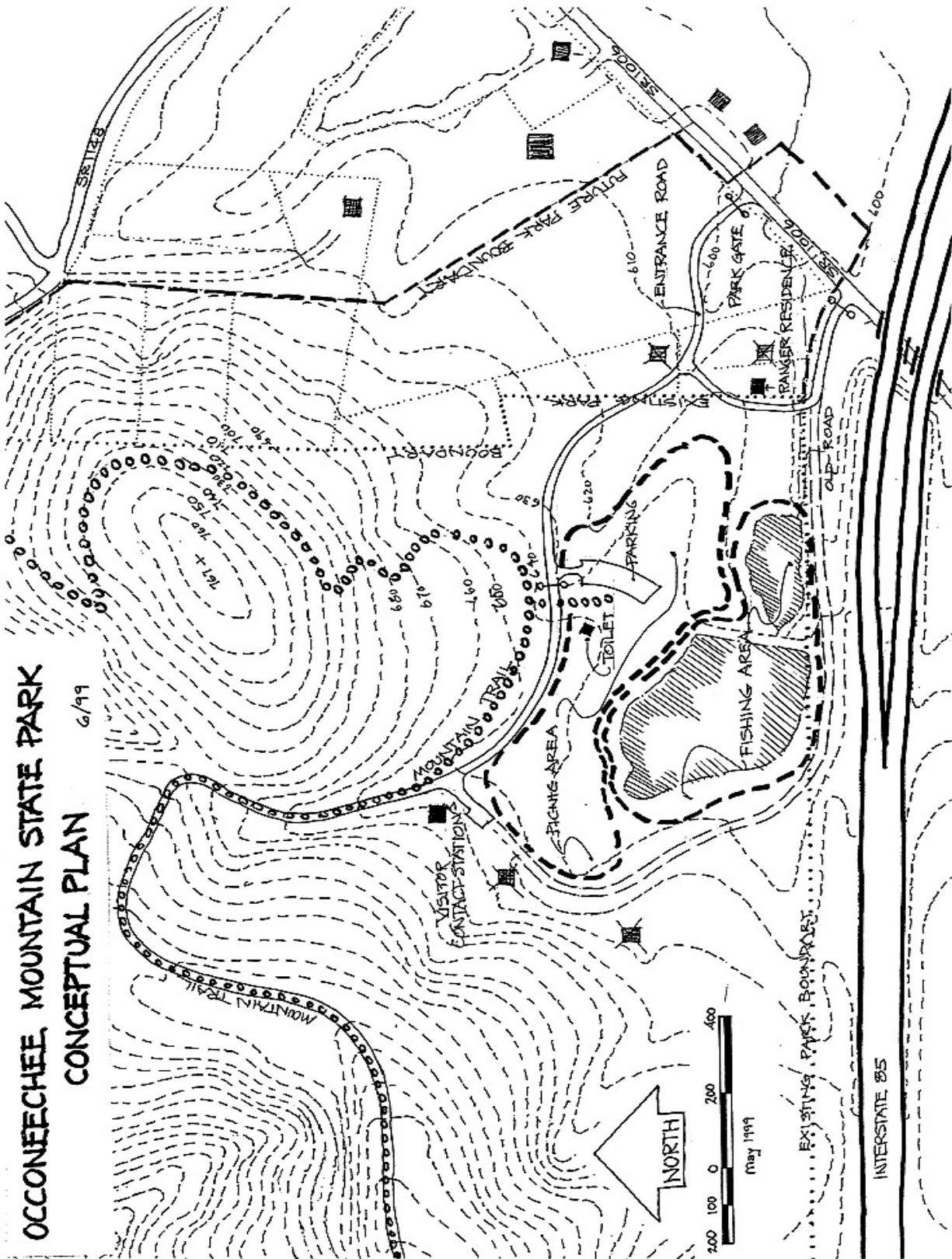
4. Upgrade of Pit Privies to Vault Toilets (\$133,681) – This project will upgrade four pit privies at walk-in campsites by installing Clevis Multrum type mulching toilets. The toilets will need to be brought in by helicopter. Two toilets will be located at the Open Air Camp and two at Few's Ford.
5. Exhibits for the Piper-Cox House (\$335,182) – This new project will provide for design and construction of interactive exhibits for the Piper-Cox House. A Romtec single seat toilet and funds for landscaping are included.
6. Lawrence Road Access (\$131,092) – The Lawrence Road Access will provide river access and a trailhead facility. The project includes construction of an access road, gravel parking for 20 cars, canoe launch, signs, a gate, and exhibits. The project is dependent upon additional land acquisition.
7. Open Air Camp Improvements (Land Dependent) (\$574,468) – Project scope includes development of a two-mile interpretive trail, canoe launch and parking, car and bus parking, open grassy area, 30-person classroom and improvements to the existing lodge. The area, once developed, should help meet environmental education and training needs.
8. Bobbits Hole Camping and Group Camp (\$240,171) – The project would construct an access road to the planned group camp in the Ridge Trail area, campsites, hiking trail access, signage and two mulching toilets, one of which would need to be flown in.
9. Office Additions (\$344,016) – Additional office space and parking are needed at the park office. This project expands the staff area and adds a toilet, constructs public toilets, adds a security system and increases car and bus parking.

Occoneechee Mountain Capital Improvements

One capital improvement project to provide for initial general development at Occoneechee Mountain is proposed. The project will include development of an access road, handicapped access to the visitor contact station and pier, road improvements to the maintenance area, contact station renovation, entrance gate, equipment storage shed, fishing pier at the pond, relocation of the vault toilet, parking lot, ranger residence, well house and chlorination equipment, water distribution lines, area light at the gate and underground electric service. A conceptual plan of the proposed initial development follows.

Occoneechee Mountain Project Priority List

Rank	Description	Project Score	Total Costs
1	General Development	672	\$ 1,144,658
	Total:	—	1,144,658



VIII. PARK OPERATIONS

INTRODUCTION

The major issues concerning Eno River State Park were identified by Division of Parks and Recreation staff and the park advisory committee prior to initiation of the general management plan process. The issues have been divided into three categories: natural resources (see Chapter VI), capital improvements (see Chapter VII), and operations. This chapter identifies park operations issues at Eno River and makes recommendations for addressing them during the next five years.

Operations / management issues that are of significant concern at Eno River are:

10. Backpack camping expansion needs;
11. Operating budget shortfalls;
12. Staffing needs;
13. Seasonal barracks;
14. Open air camp use;
15. Former Girl Scout camp use;
16. Trail needs;
17. Canoe rentals;
18. Coille Quarry acquisition; and
19. Pleasant Green Dam

BACKPACK CAMPING EXPANSION

There is currently one backpack camp at Eno River consisting of five individual sites. The master plan calls for a future backpack camp northwest of Bobbitt's Hole, still a desirable addition to the park's existing facilities.

If the park expands further into the Eno wilderness, the expansion would provide a good opportunity for an additional backpack camp. The park periodically receives requests for "expedition-type" camping, where users pack from one campsite to another. The park also receives requests for trips that are more challenging than the one-mile hike into the current sites. The wilderness area west and south of Few's Ford Access has many suitable sites for backpack camping. Selecting and establishing one camp area would meet an outdoor recreational need not available anywhere else in the Piedmont outside of Uwharrie National Forest. Other recreational resources in the region offer only the pack-in to one camping area, as is the current situation at Eno. Only the national forest offers the distance and terrain challenge that could also be offered at Eno River State Park. Camping currently occurs in the Eno wilderness area, usually without permission or knowledge of the landowners.

Recommendations

After acquisition of the Eno Wilderness, the area should be investigated to identify a suitable site for a backpack camp. As soon as resources become available, the camping area should be built and opened to the public.

OPERATING BUDGET SHORTFALLS

The budget for operations, equipment, and supplies is not adequate to effectively manage the existing park. All program areas are affected, including natural resource management, interpretation and education, protection and safety, administration, and maintenance.

Operating budget shortfalls continually result in equipment being out of service due to lack of repairs, severe shortages of interpretation and education supplies, office supply shortages, an unfunded seasonal employee position, facilities in need of repair, shortages of proper emergency medical supplies, inadequate safety and security supplies, insufficient construction supplies, and inadequate types or amounts of equipment to accomplish various jobs.

Since 1994, Eno River State Park has added 18 parcels totaling over 383 acres, and other land acquisition is pending or planned. A new picnic facility, three miles of trail and two visitor-use facilities – the Few's Ford picnic area and the Piper-Cox House – have been added. New permanent employees and new seasonal employees have been added with associated equipment, resulting in additional support costs. Occoneechee Mountain has been added as a satellite natural area. Eno River is a growing park and will continue to be so for the foreseeable future as the master plan is completed and land acquisition is hastened due to pressure from urbanization.

Visitation has increased substantially over the years, and all indicators are that this trend will continue, resulting in higher demand for support and program supplies. The park budget has not grown enough to accommodate increased size, facilities and visitation.. The budget has not even accounted for inflation or allowed for raises in seasonal wages or uniform allocations.

Recommendations

Increase the park operating and equipment budget as follows in order to adequately operate the existing park. Purchase the following equipment to aid park staff communications and maintenance efforts.

Table VIII-1. Proposed Operating and Equipment Budget¹

DESCRIPTION	NEED
Temporary/Seasonal Wages	\$15,411
Waste Collection	804
Pest Control Services	348
Lawn & Ground Maintenance Services	400
Electric Service	2,599
Natural Gas	21
Water and Sewer Service	117
Fuel Oil	610
Repairs - Buildings	1,500
Repairs - Air Conditioning Systems	300
Repairs - Carpentry	300
Repairs - Electrical Systems	300
Repairs - Plumbing	300
Repairs - Other Structures	300
Motor Vehicle, Tractor, & Boat Repairs	6,500
Repairs - Other	575
Service and Maintenance Contracts	322
Rental of Motor Vehicles	4,200
Rental of Other Property	175
Telephone Service	3,168
Data Processing Services	252
Postage, Freight, Packages	850
Printing, Binding, Duplication	60
Advertising/Legal Ads	360
Employee Tuition/Training Expense	600

¹This budget does not include salaries or benefits for permanent positions.

DESCRIPTION	NEED
Office Supplies and Materials	750
Date Processing Supplies	200
Film and Camera Supplies	100
Law Enforcement, Safety, Security Supplies	690
Other Supplies - Fire Fighting, Flags, etc.	200
Janitorial Supplies	725
Lumber, Electric, Plumbing	2,000
Agricultural/Animal Supplies	150
Sand/Gravel/Concrete Supplies	400
Structural Steel Supplies	200
Road and Park Signs	204
Other Construction Supplies	3,117
Gasoline	2,403
Oil/Lubricants/Hydraulic Transmission Fluids	181
Tires	947
Repair Parts - Trucks, Tractors, Boats, etc.	7,106
Clothing and Uniforms	3,900
Medical and First Aid Supplies	200
Scientific Supplies, Chemicals	116
Educational Supplies	250
Other Supplies	297
Miscellaneous Contractual Services	379
TOTAL:	\$64,887

Table VIII-2. Equipment Needs

DESCRIPTION	COST
Riding Lawn Mower	\$ 8,000
Walk-behind Mower	3,500
Tractor with Front End Loader	32,000
All-terrain Utility Vehicle	4,500
Band Saw	500
Compound Mitre Saw	750
Two String Trimmers	475
Push Mower	450
Three Folding Conference Tables	450
12-inch Table Saw	2,000
Bush Hog	600
Four Mobile Radios	3,600
Three Hand-held Radios	3,000
18-Volt Cordless Drill	200
TOTAL:	\$60,025

STAFFING NEEDS

Present staffing levels are adequate for the current park size and physical plant. Additional staff will be necessary to operate and care for the park as the master plan is completed, the park is expanded in size and facilities beyond the original plan, a satellite natural area is added to the park's responsibilities, and visitation increases with park and population growth.

Eno River State Park is a linear park covering 12½ miles of river and has two major and four minor accesses as well as six neighborhood accesses. Distances between park areas place increased demand on staff time to cover and care for the accesses. Five accesses must be opened and closed daily. Current park care and services are adequate when the park is fully staffed but become sub-standard when positions are vacant.

Completion and expansion of the master plan, the addition of Occoneechee Mountain State Natural Area, and continued visitation growth will necessitate adding staff. Growth will add 3½ more miles of river, over 25 miles of trails, three more camping areas, more than 3,000 acres of wilderness, a major and minor access, two large quarries, several additional ranger residences and support facilities,

six to eight additional visitor-use buildings and two more gated accesses that must be opened and closed daily.

Park attendance has grown an average of 18,726 visits a year over the last five years. At that rate, attendance will exceed 400,000 in five years. Occoneechee Mountain, opened in 1999, is now seeing over 30,000 visits annually.

One additional ranger is needed to provide interpretation and education to increased numbers of visitors at Eno River and at Occoneechee Mountain, which is in an urban area with six schools less than a 10-minute drive away. The ranger will also be needed for increased patrols, emergency response, natural resource management, trail maintenance, administration and operating duties that will come with park expansion. Additional seasonal staff will be necessary to cover the programming, maintenance, operations, and visitor safety duties during peak-use seasons and the growing season when lawn and trail maintenance demands are high.

Table VIII-3. Staffing Needs

	CURRENT STAFF		PROPOSED ADDITIONS	
Permanent	Park Superintendent II	1		
	Park Ranger III (OCMO)	1	Park Ranger	1
	Park Ranger II - Lead I&E	1		
	Park Ranger II - Lead NRM	1		
	Park Ranger I	2		
	Maintenance Mechanic III	1		
	Maintenance Mechanic I	1		
	Office Assistant III	1		
	General Utility Worker	1		
Seasonal	8-mo. Assistant Ranger	1	3-mo Asst. Ranger	1
	6-mo. Gen. Utility Worker	1	3-mo. Gen. Utility Worker	1
	3-mo. Gen. Utility Worker	1		
	3-mo. Park Attendant	1		
	3-mo. Peak Load Attendant	1		
	8-mo. Peak Load Office Asst.	1		
	8-mo. Peak Load Naturalist	1		

Recommendation

As new park land is acquired and new facilities acquired and constructed, staff positions should be added to cover the additional work load that park expansion and increased visitation bring.

SEASONAL BARRACKS

Eno River State Park has difficulty filling seasonal positions due to local job competition. Rarely are all the seasonal positions filled, and it is common for half or more to be vacant. These vacancies result in inadequate care of the park.

The park is regularly contacted by persons who would like to work at the park if housing were provided. They cannot afford to work seasonally at Division wages and pay for outside housing. The superintendent receives several calls each year from students who would like to do internships in the park if housing were provided. Some have even offered to work for free if they are housed.

Recommendation

As houses are added to the park through property additions, one house should be selected and converted to seasonal housing. Selection should be based on permanent staff housing needs, building condition, appropriate location, and adequate layout.

OPEN-AIR CAMP USE

The open-air camp is located on the east end of the park near Guess Road. The camp was formerly a camp for children suffering from tuberculosis. It consists of approximately 24 acres with facilities including a lodge that is over 60 years old and three houses. The property is currently owned by the Eno River Association, which rents the facilities to graduate students and families. Proposed expansion of the park includes the open-air camp. During the GMP process, division staff examined the camp and facilities to determine how the area could best be used.

Recommendations

The brick house located farthest from the lodge is in very good condition and could be used in the future as a ranger residence. It has four bedrooms, two full baths, and is already connected to city water. The former dump site behind this house needs to be inspected for any potential remaining problems.

Because the lodge and house nearest the Eno River (camp house) are built on the edge of a steep bank, this site would not be suitable as an environmental education center for young children. With some repair work, however, the lodge and two older homes could be used as a retreat center, which could be rented out to various groups for meetings and overnight use. There seems to be a demand

for an affordable overnight meeting center in the Triangle area. Groups might include DPR staff, other DENR agencies, church groups, and natural resource or environmental education organizations. Once the useful life of the facilities is reached, the buildings could be removed and the area maintained in its natural state.

Prior to acquisition of the area, the Division should itemize the cost of repairs to prepare the facilities for group use and a cost/benefit analysis prepared. Although the facilities are structurally sound, the site has water problems. The wells for the lodge and camp house have had contamination problems in the past. It may be possible to hook these facilities up to city water (2-inch pipe with high water pressure). The bathroom facilities in the lodge would have to be expanded to allow groups to use this building overnight. Other repair work would include making the buildings accessible according to ADA guidelines and determining or creating fire evacuation routes. It should be noted that if the facilities are rented out as a group and the lodge is made accessible, the two houses would not have to be made accessible. The heating system in the lodge, consisting of two wood-burning stoves and some electric baseboard units, should also be inspected and recommendations for heating the lodge made.

USE OF FORMER GIRL SCOUT CAMP

The former Girl Scout camp encompasses 40 acres of forested land contiguous with the open-air camp off Guess Road. This area is state owned and is maintained by park staff for day use by organized groups. Facilities include three picnic shelters in very good condition and two pit toilet sites in need of repair. The area was examined by Division staff as a part of the GMP process to determine its best use.

Recommendations

Remove the two-seater at the last picnic shelter and repair the other two pit toilets. In particular, provide natural lighting in the now-dark three-seater by removing boards above the door or by using heavy translucent plastic on the roof as a skylight. Future replacement of the pit toilets should be considered. Composting toilets or a better alternative should be decided upon in the next five years.

Repair and maintain the trails. Hurricane Fran damaged many trees in the area. Some of these need to be cleared off the trails and any dangerous situations eliminated. The trails also include some steep slopes that need stabilization to prevent erosion.

Prepare a brochure, leaflet, or booklet for youth leaders describing environmental education activities appropriate to the site, giving stream-study locations, a map of trails, etc. Because there are no large grassy areas on this site for Project WILD games, ball games, or similar recreational activities, this site would be best used for forest and stream studies.

TRAIL NEEDS

Eno River State Park has approximately 20 miles of trails, and these trails receive heavy use. Continuing population growth and urbanization in the area around the park will add to future demand for hiking as well as other types of trails. More trails are needed to meet the current level of demand and the anticipated increased future demand.

The 1979 Eno River State Park Master Plan called for equestrian trails, and some were initially established in the park. A DPR review of the park in 1990 resulted in the recommendation that the equestrian trails be deleted, since the park had insufficient land for such trails. At that same time, the master planned horse camp at Few's Ford was also deleted.

There is still some public support for equestrian trails and interest in re-establishing them at Eno river. Planned future land acquisition should provide the larger land base needed for the 10-mile minimum length for horse trails. With the current land acquisition plans, the use of existing old road beds (which are currently designated as hiking trails only), and some utility easement corridors would allow approximately 12 to 14 miles of equestrian trails to be designated; only ½ mile of new trail would need to be constructed to complete such a loop system. Upgrade and maintenance of the existing trails plus the construction of the half mile of new trail should cost \$50,000 to \$60,000.

Expanding the equestrian trails as described above would also increase the amount of available hiking trails in the park, since hikers are allowed on all park trails. With the park's proximity to developing urban areas, any increase in trail mileage would be a significant contribution toward reducing the current user density on park trails.

When the park's master plan was written in the late 1970' s, few people participated in mountain biking. Since most biking involved traditional uses and road cycling, the master plan did not include biking trails. Since that time, mountain biking has become a popular sport, and area participants are calling for the establishment of mountain biking trails. Like equestrian trails, mountain biking trails have more negative environmental impact and trail-user safety concerns than hiking/walking trails. These concerns will need to be addressed prior to the planning and establishment of such trails.

Canoeing has also grown in popularity over the years. In fact, the 1987 report of the President's Commission, *America Outdoors*, listed canoeing as the outdoor recreational activity that showed the greatest percentage change in participants from 1960, 515 percent. Bicycling was second, with 382 percent growth. New durable and light materials have allowed boating in waters that previously were less navigable. Although no use figures are available and use is still light, canoeing activity has increased at Eno River over the years. The canoe access for Lawrence Road, shown in the master plan, is still needed.

The newly authorized Oconeechee Mountain State Natural Area has traditionally been a popular hiking area, and use will certainly increase when the state acquires and manages the area. There are numerous visitor-made trails over the property, some of which need to be closed, rerouted, or repaired. The quarry on the site presents particular dangers, with its steep slopes and loose rock, and there are sensitive natural areas and private property that need to be avoided.

Recommendations

Acquire additional park land in order to expand the trail system and to keep up with increasing use. As new land is acquired for the park, it should be evaluated for trail use. Given the increasing demand for mountain biking trails, new land will be considered for mountain biking trail use. Existing trail guidelines and the goals of trail user safety and natural resource protection will be used in determining suitability for such trails.

When land acquisition is sufficient to construct the required minimum 10 miles of equestrian trails, and when horse trailer parking is constructed, equestrian trails should be redesignated at Eno River.

It is hoped that land added to Eno River within the next five years will be sufficient for construction of a mountain bike trail system meeting trail guidelines. If not, Division staff will respond to trail user needs by considering the addition of mountain bike use to the by-then-existing system of equestrian trails in the park and making a recommendation to the Division director. Both William Umstead and South Mountain state parks have accommodated bike trail use in such a manner.

If the Lawrence Road property is added to Eno River, a canoe access should be constructed on that site.

A single loop trail should be created and signs placed at Occoneechee Mountain that direct visitor use away from sensitive natural areas and adjacent private properties. The current many visitor-made trails should be closed by selected planting of the site. "DANGER" signs must be positioned on any trail that takes visitors near the quarry site, and visitors must be kept away from the quarry edge.

CANOE RENTALS

Now that River Runners Emporium in Durham has gone out of business, the closest location for canoe rentals is in Cary, approximately 30 miles away. Since there is no longer a convenient place to rent canoes near the park, should the park rent canoes or seek a concessionaire to operate a canoe rental business? The superintendent reports that during the peak paddling season, the park receives five or six calls weekly from people wanting to rent canoes. Fewer calls are received during periods of lower water and cold weather. This level of demand is not enough to support a business or to warrant in-house canoe rentals.

Recommendation

At this time it is not economically practical for a canoe rental business to be operated at Eno River.

COILE QUARRY ACQUISITION

Downstream from Pleasant Green road, adjacent to the river, is the Coile Quarry. A narrow strip of state-owned land along the river is all that separates the river and quarry. The four-to-five-acre quarry and surrounding land are now a part of the state park.

The Coile Quarry has a long tradition of being used as a swimming hole. Although somewhat remote from park trails, there are informal, well-worn trails that lead to the site. Despite attempts by the former owner to actively discourage trespassing, it remains a popular swimming hole. Its continued use is indicative of public demand for swimming. One drowning occurred in 1993.

The quarry has some steep sides that rise up to 18 feet above the water. The steep slope and rocks make egress from the water difficult. Low bank is very limited, and gently sloping bottom exists in only one area. The water is clean and clear and supports waterfowl and fish. Water depth is believed to be 60 to 80 feet. A deteriorated low fence surrounds much of the rim. A gravel road (chained off) provides vehicular access to the site.

Now that the quarry and surrounding lands have been acquired for the state park, the question of what to do with the quarry must be resolved. An appropriate level of care must be provided for park visitors.

Recommendations

Consult with the Attorney General's Office prior to acquisition to obtain guidance concerning safety and liability issues. Consult with the Park Advisory Committee on appropriate uses and management of the quarry. Thoroughly study the natural and man-made hazards of the quarry. Study and recommend the best long-term use of the quarry. Consider actively managing a swimming, fishing, and diving area. Investigation of the quarry should consider the leasing of the area and improvements that would be desirable. Be prepared to immediately post appropriate signage upon acquisition and to take other steps such as patrols to manage the area.

PLEASANT GREEN DAM

A study of the Pleasant Green Dam is underway to determine what should be done to maintain the dam and area or whether and how the dam should be removed. Silt is building up behind the dam, which is old and is in need of repair if it is to stay. Dam failure would release silt downstream, damaging the river's health. The dam also serves as a barrier for fish migration. However, the impoundment behind the dam is scenic and a popular canoe spot.

Several older, obsolete dams have been removed from streams in North Carolina in recent years. These include the Rains Mill Dam, Quaker Neck Dam and the Cherry Hospital Dam. Completion of the dam study should determine the best course of action regarding Pleasant Green Dam. If demolition is recommended, steps should be taken to inform local citizens and park users as to why such a decision was made.

IX. LAND ACQUISITION NEEDS

LAND ACQUISITION STATUS AT ENO RIVER

Although Eno River State Park was originally conceived as an 8,750 acre park, the park's master plan, completed in 1979, calls for a 2,913 acre park. Land needs identified since 1979 have increased the planned size of the park to 3,249 acres (see Figure IX-1). At the end of December, 2002, the park contained 2,868 acres.

The land acquisition objectives for Eno River State Park are both many and varied. Of critical importance is to adequately protect water quality and riverine aquatic habitat. Eno River is home to numerous rare aquatic species and is ranked as nationally significant by the N.C. Natural Heritage Program. Other significant natural areas, including sensitive or rare terrestrial communities and species, require protection as well. Preservation of the scenic quality of the river valley is also an important goal. Providing expanded outdoor recreational and educational opportunities is critical and challenging as public demand for these services constantly increases. Equally challenging and important is to develop and maintain a functional wildlife movement corridor. Lastly, it is necessary to provide the land base and buffer areas needed for park facilities.

FUTURE LAND ACQUISITION NEEDS AT ENO RIVER

In the rapidly growing and urbanizing Orange and Durham counties, it is increasingly challenging to acquire the land necessary to meet all the park goals. In order to adequately address the land acquisition objectives, significant additions to the park are needed. Although the amount and availability of undeveloped land near the park is continually shrinking, most of the future land acquisition needs identified are undeveloped at this time.

Section 1 - Western Terminus

The park should be expanded upstream, moving the western terminus of the park from Lawrence Road to U.S. Highway 70 Bypass near Hillsborough (Figures IX-1, IX-2). This will add slightly more than one mile of river to the park. At a minimum, a 500 foot buffer on each side of the river should be acquired. On the east side of the river, a wider buffer is recommended which would include all of the Poplar Ridge Slopes and Bottom Significant Natural Heritage Area downstream of US 70. Factors such as topography, vegetation and land use will be used to determine the optimum buffer width. Desired buffer width in other sections of the park will be determined in the same fashion.

Approximately 199 acres of land in 16 separate tracts are included in these acquisition needs. Inclusion of this river section in the park will help permanently protect water quality and aquatic habitat while preserving scenic quality and providing additional recreational possibilities.

Section 2 - Fews Ford Area

Significant additions of land are needed to the section of the park between Lawrence Road on the west and Pleasant Green Road on the east. Section 2 refers to the areas south and west of Eno River in this park segment, while Section 3 refers to areas north and east of the river. Most of the Section 2 acquisition needs will provide for continuous state ownership of land adjacent to the river. An unbroken stretch of public land will serve many purposes, especially protection of water quality, aquatic habitat, scenic quality and a corridor for wildlife movement. A portion of a Significant Natural Heritage Area, the Cates Ford Slopes and Uplands site, occurs within the Few's Ford Access Area of the park. The site extends south and west from this section of the park. A total of approximately 1,148 acres is shown as future needs for the park in Section 2a. This includes the property the Division is currently working to acquire north of the AT&T right-of-way which contains approximately 815 acres.

The area south of the AT&T right-of-way has also been identified as being valuable for wildlife and open space needs. This area is section 2b and contains approximately 1,115 acres. Section 2b should be pursued for acquisition only if the piece north of the AT&T right-of-way is acquired for the park.

Section 3 - Buckquarter Creek Area

Approximately 915 acres need to be acquired for addition to the park in Section 3. This will encompass the portion of the Few's Ford Slopes and Uplands site north of the river that is not already within the park. The additions will also provide an adequate buffer area for protecting the site. Buckquarter Creek, an important Eno River tributary, will form a large portion of the park's northern boundary. Section 3 acquisitions will help protect a large area of mature, relatively undisturbed hardwood forest. Though this type of habitat was once common in the Piedmont, it is now fairly rare. An unbroken, publicly owned river corridor will be established and the scenic character of the river will be preserved. With the addition of land along Buckquarter Creek, protection of water quality and aquatic habitat will be greatly strengthened.

Section 4 - Southern Area

The area of the park from Pleasant Green Road on the west to Cole Mill Road on the east comprises Section 4 and contains the southernmost stretch of the river and park. Approximately 141 acres should be added to the park in this area. Several of the identified tracts will provide for continuous state ownership of the river corridor, or will widen it in areas where it is narrow. One larger area of undeveloped land is also included as a future need in this section of the park. These tracts will provide important wildlife habitat while also improving the ability of the river corridor to allow movement of wildlife.

Section 5 - Eastern Terminus

Section 5 extends from Cole Mill Road on the west to the park's eastern terminus at Guess Road. A small number of land acquisitions totaling approximately 101 acres are needed. Most of the acquisitions will continue state ownership of the river corridor or widen the existing corridor. The Open Air Camp property near Guess Road, a former Girl Scout camp and tuberculosis resident camp, may be used as an environmental education facility. One area of undeveloped acreage south of the river has been identified for acquisition. This area will provide additional wildlife habitat while improving the functionality of the wildlife corridor. This will help mitigate anticipated increased public use of the park near Guess Road and the widening of Guess Road to four lanes.

SUMMARY

December, 2002 Size of Eno River State Park	2,868 acres
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Previously Identified Acquisition Needs	540 acres
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Additional Acquisition Needs:

Section 1:	Western Terminus	199 acres
Section 2a:	Fews Ford (north of ROW)	1,148 acres
Section 2b:	Fews Ford (south of ROW)	1,115 acres
Section 3:	Buckquarter Creek	915 acres
Section 4:	Southern Area	141 acres
Section 5:	Eastern Terminus	<u>101 acres</u>

Total of additional needs	<u>3,619 acres</u>
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New Total Planned Size - all sections	7,027 acres
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New Total Planned Size without section 2b	5,912 acres
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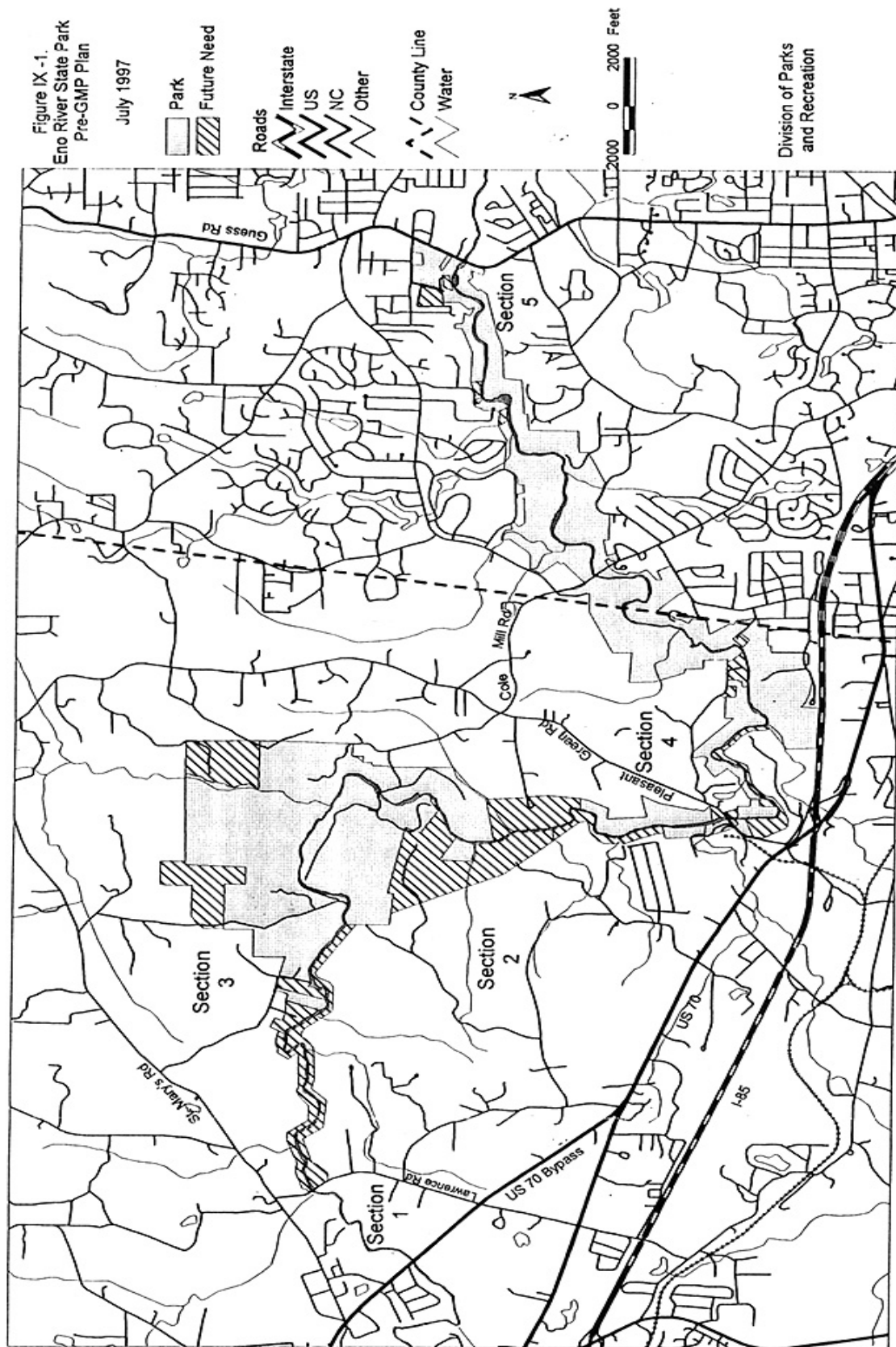


Figure IX-1. Eno River State Park Pre-GMP Plan

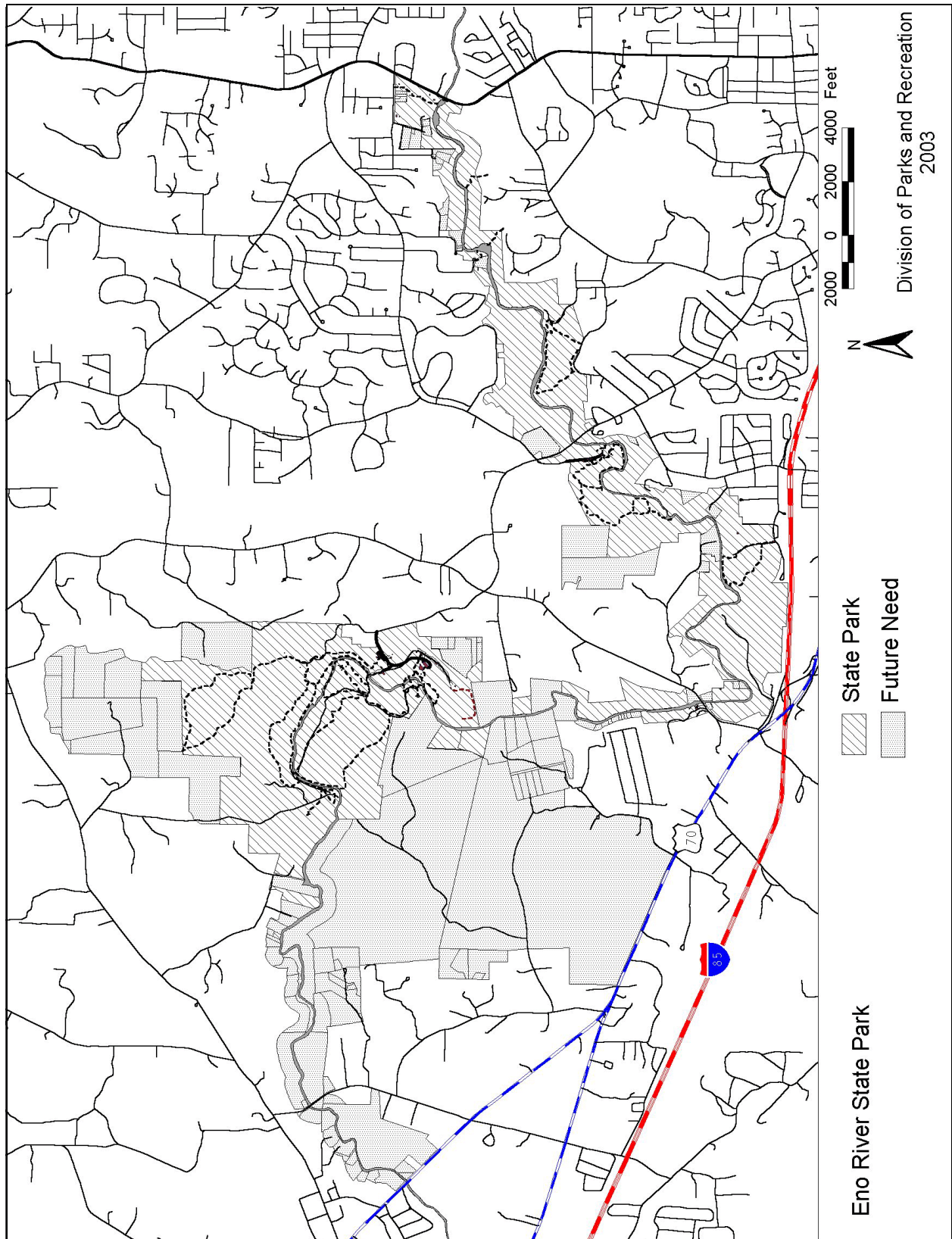


Figure IX-2. Eno River State Park Land Acquisition Needs

LAND ACQUISITION STATUS AT OCCONEECHEE MOUNTAIN

In 1994, the North Carolina General Assembly authorized the Division of Parks and Recreation to acquire lands at Occoneechee Mountain. In May of 1995, the Division of Parks and Recreation received a grant award from the Board of Trustees of the N.C. Natural Heritage Trust Fund. The award represented partial funding for acquisition of four tracts of land totaling approximately 96 acres. The remainder of the money needed for the first land acquisitions was awarded from the Natural Heritage Trust Fund in May of 1996.

Since receiving those grants and other funds, the Division has acquired 120 acres of land for Occoneechee Mountain State Natural Area. Acquisition of two tracts representing approximately 59 acres took place in January 1998. The acquisition included a house that is used as a ranger residence. In addition, a 25 acre parcel at the base of Occoneechee Mountain is leased from the Town of Hillsborough.

FUTURE LAND ACQUISITION NEEDS AT OCCONEECHEE MOUNTAIN

When completed, Occoneechee Mountain State Natural Area will contain approximately 283 acres. The primary goal of land acquisition efforts is to protect the Occoneechee Mountain Significant Natural Heritage Area (Figure IX-3), which is judged to be of statewide significance biologically by the N.C. Natural Heritage Program. Protection will be provided by state ownership of the entire site along with an adequate buffer area. The future needs encompass the mountain, the adjacent undeveloped land and extends to the river. A small area of land will be used for a staff residence and parking area. Space for trailheads and other facilities associated with the state natural area will also be provided.

Future needs include acreage along the North side of the Eno River that provides a 300-foot buffer along the river. This land will provide a vegetative buffer to help maintain water quality and provide wildlife corridors. It will also provide scenic protection by preventing development along the river.

SUMMARY

December 2001 Size of the State Natural Area	120 acres
Land Acquisition Needs	<u>163 acres</u>
Total Planned Size	283 acres

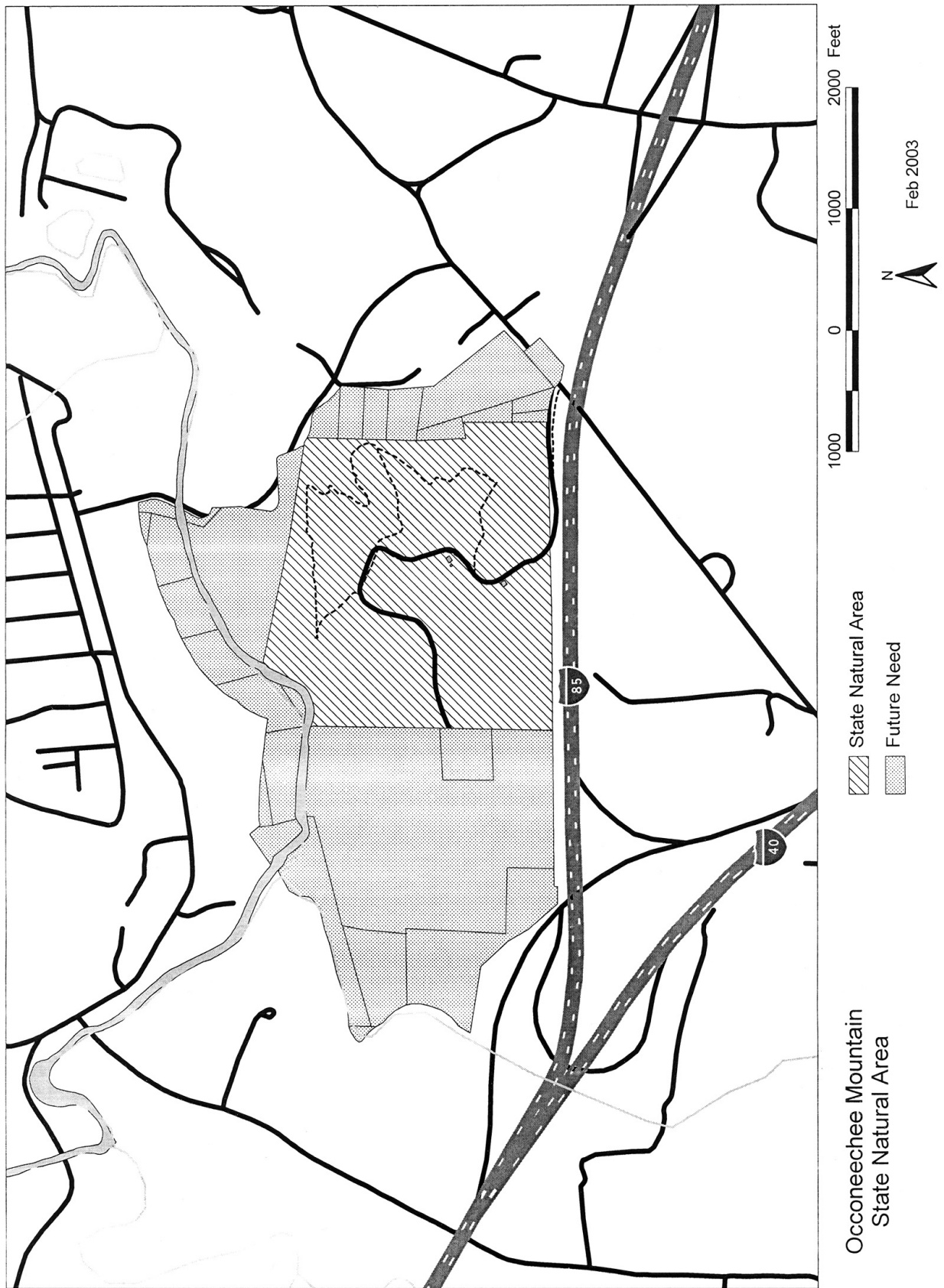


Figure IX-3. Occoneechee Mountain State Natural Area Land Acquisition Needs. February, 2002